

FIG. 2

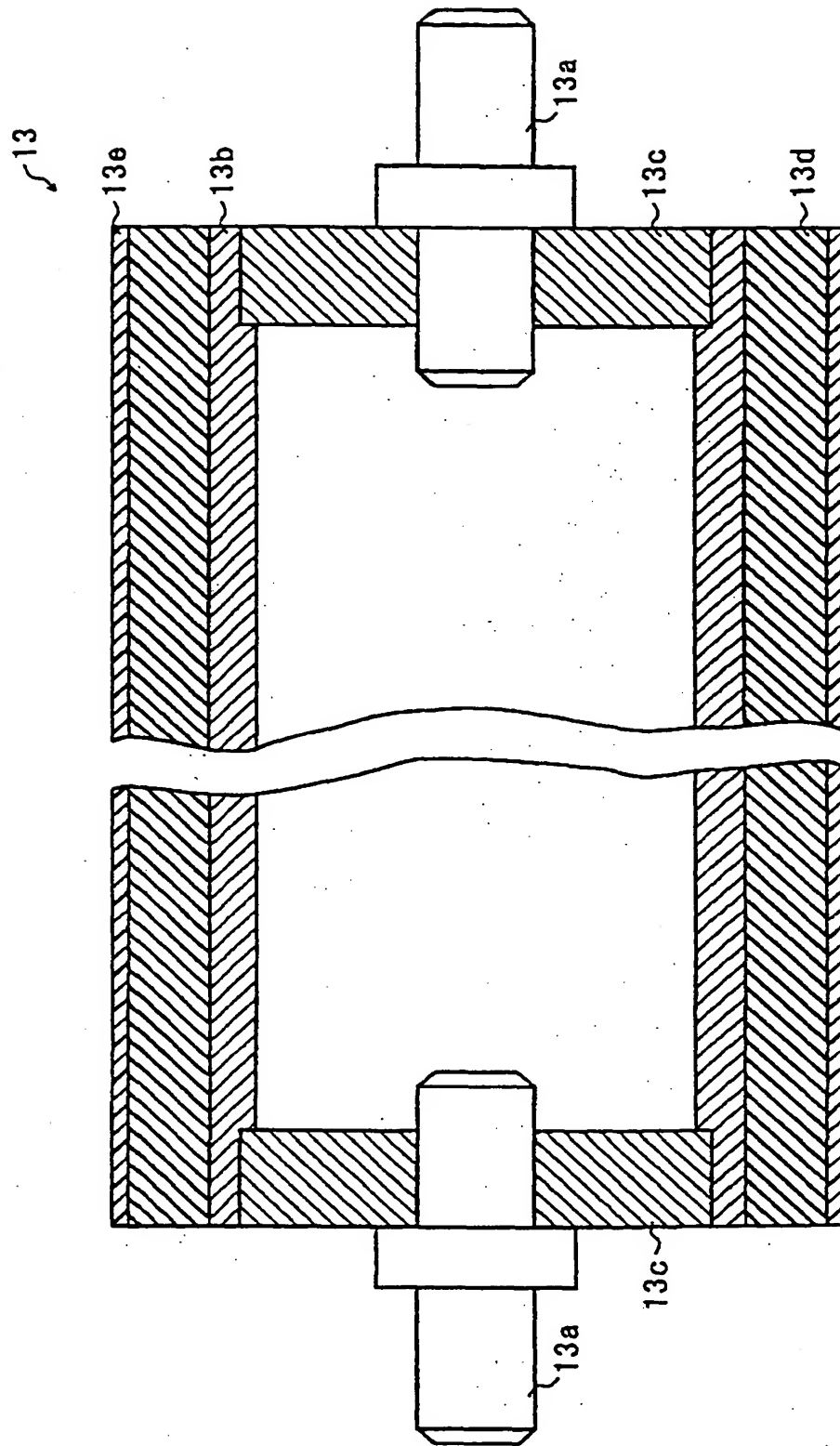


FIG. 3

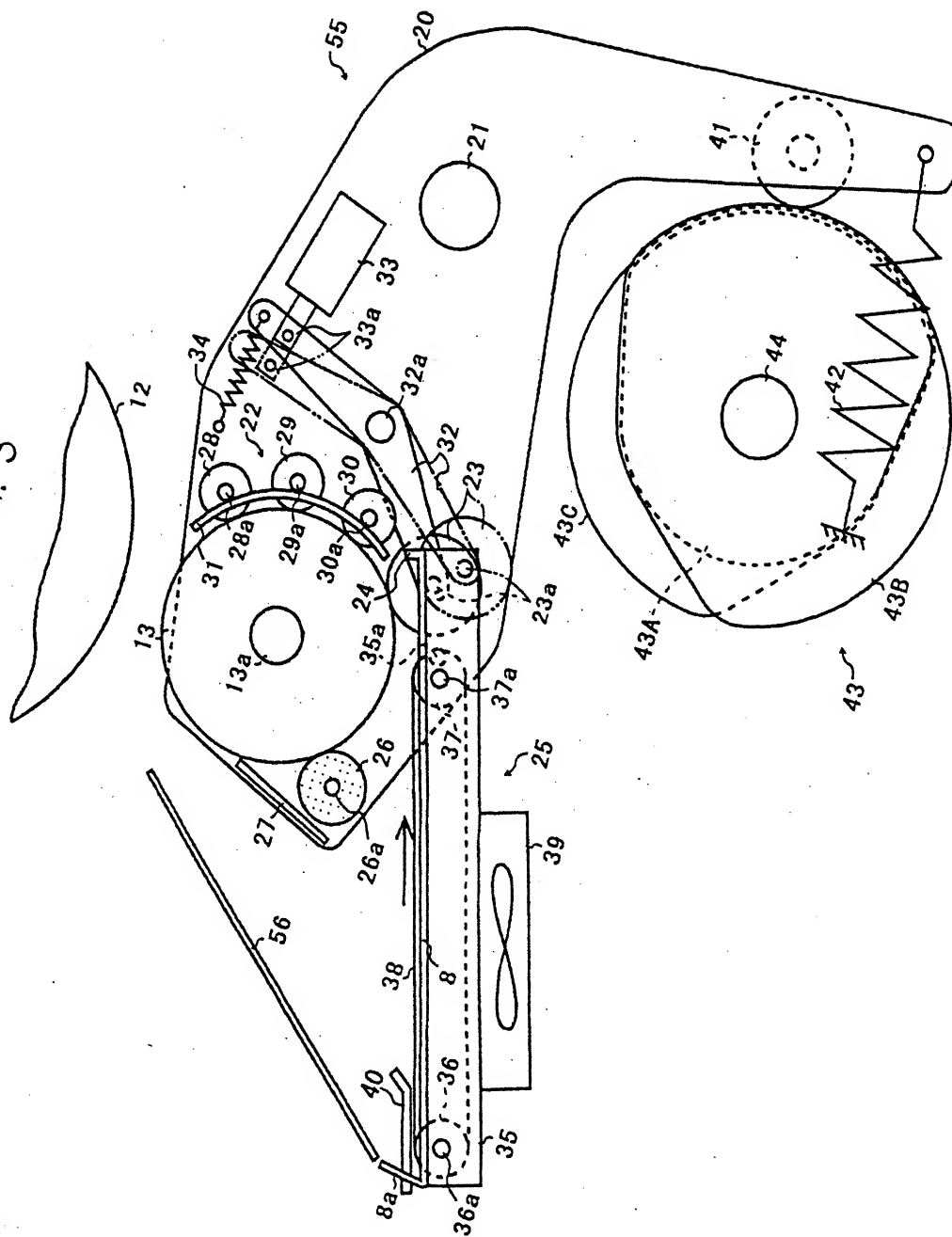


FIG. 5

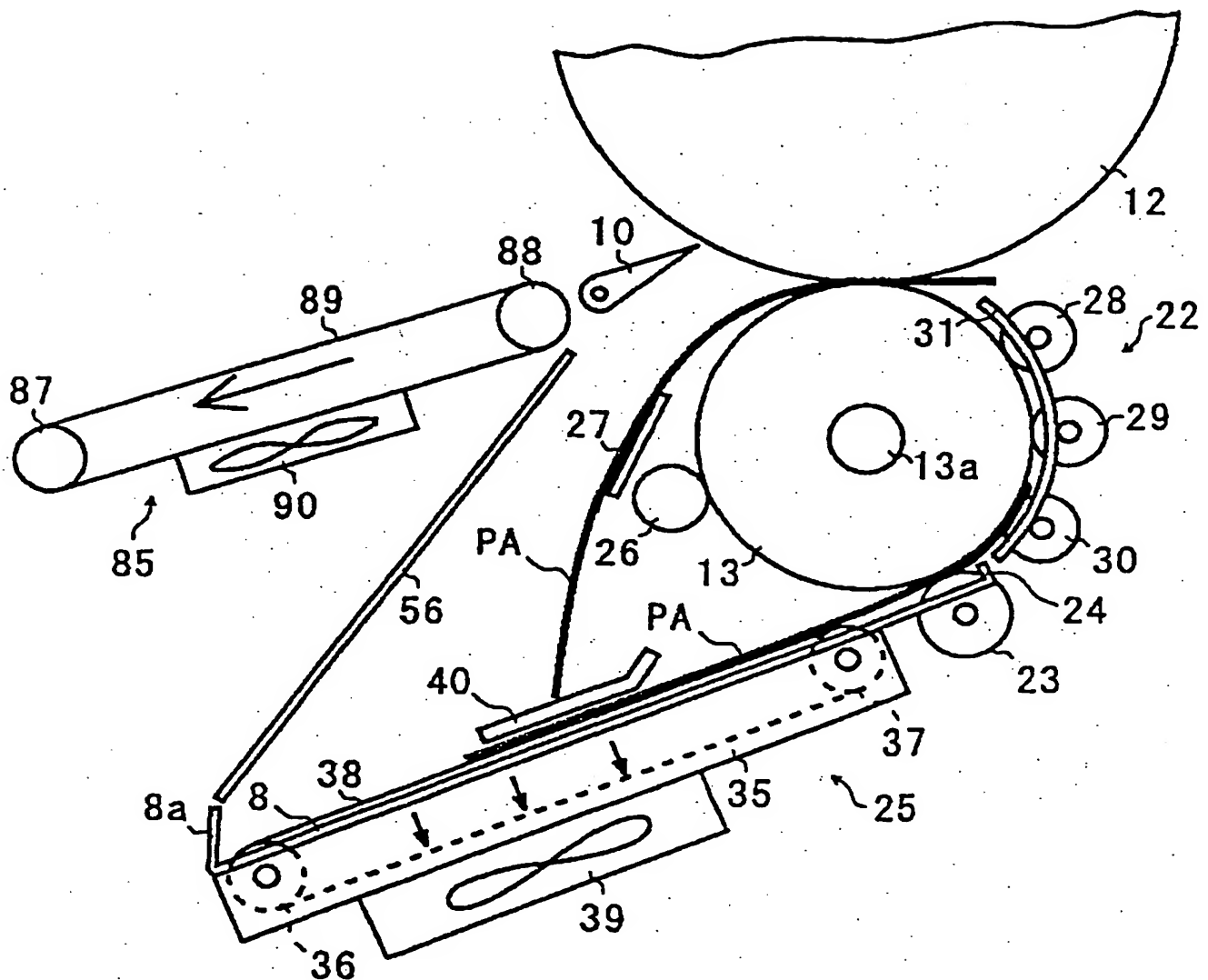


FIG. 6

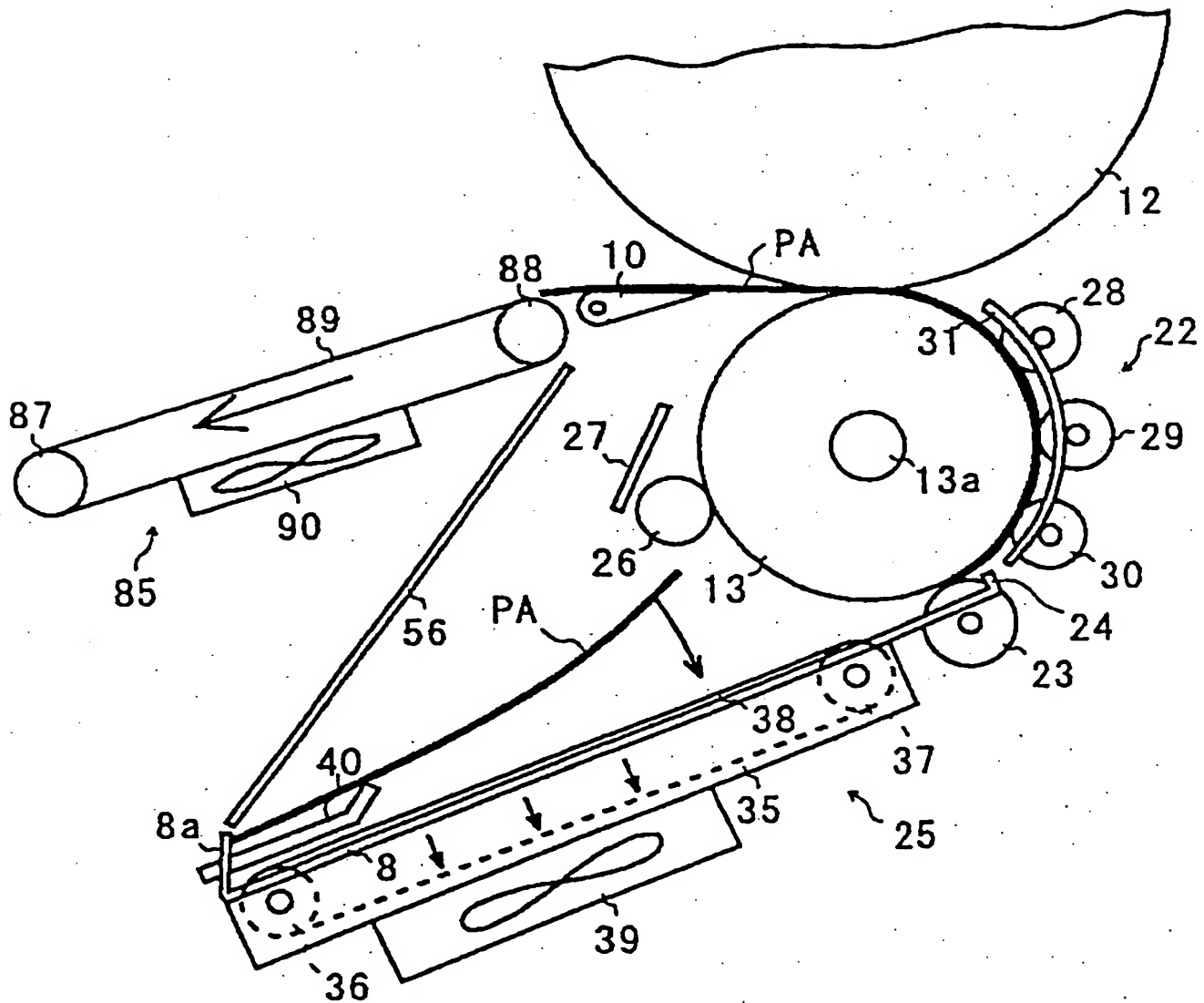


FIG. 7

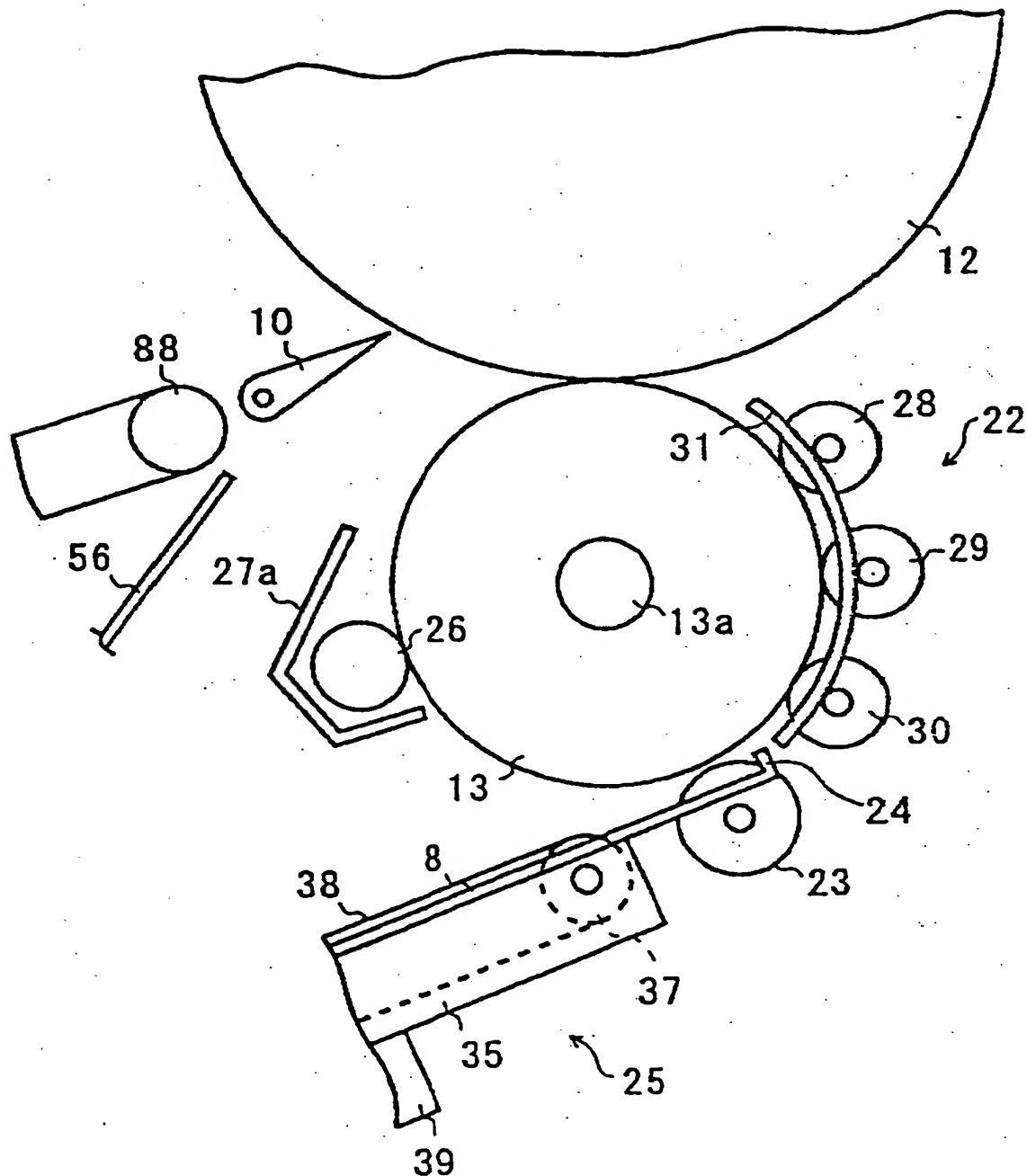


FIG. 8

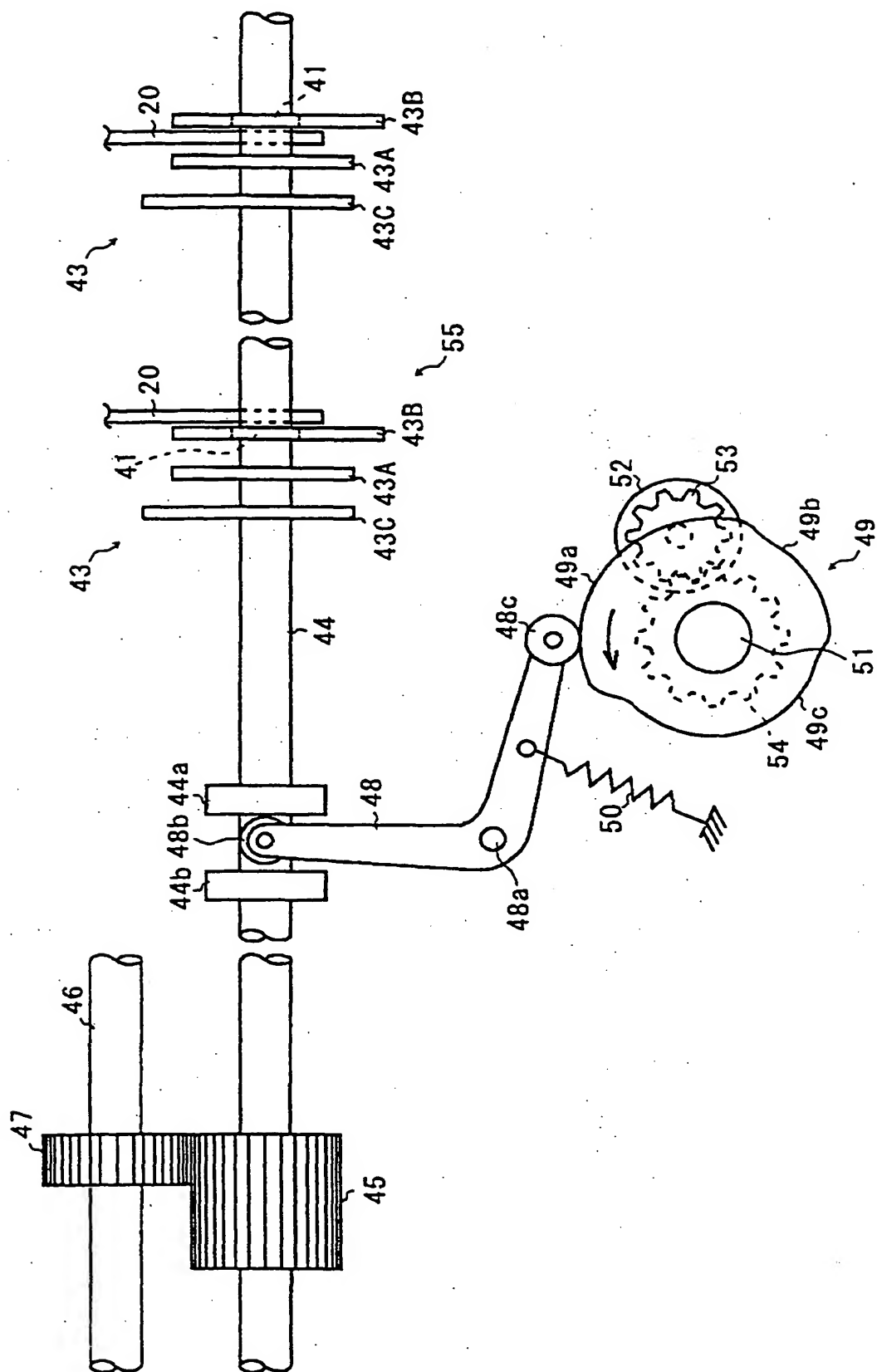


FIG. 9

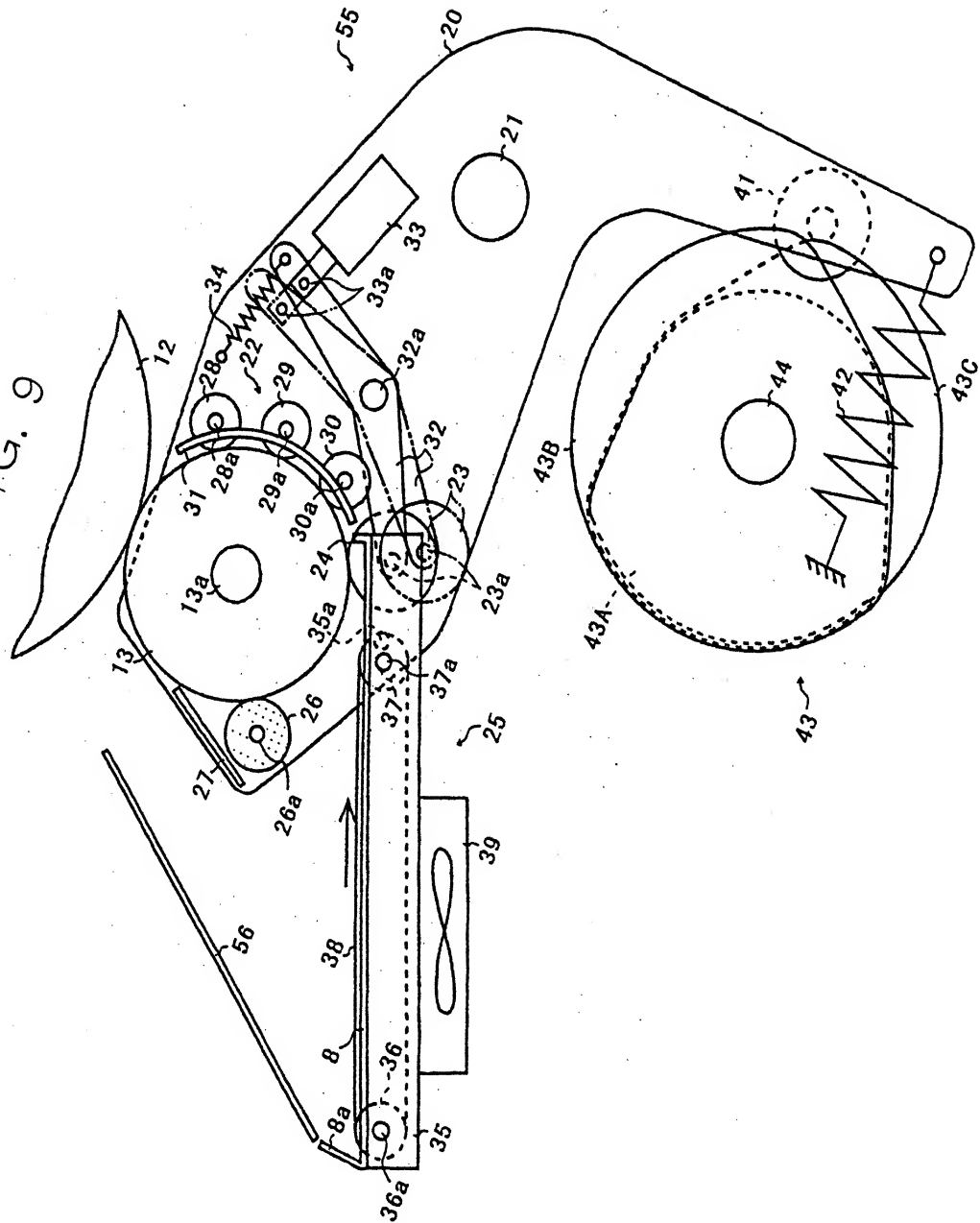


FIG. 10

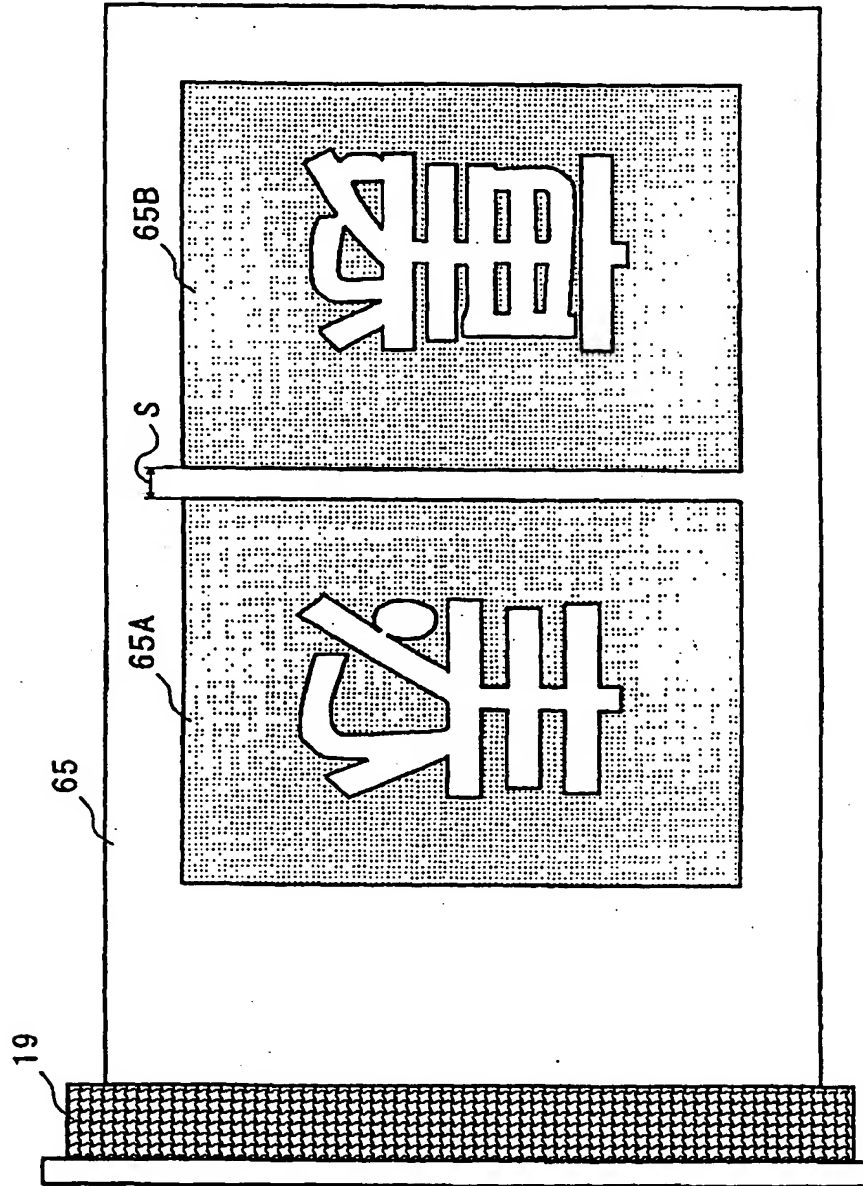


FIG. 11

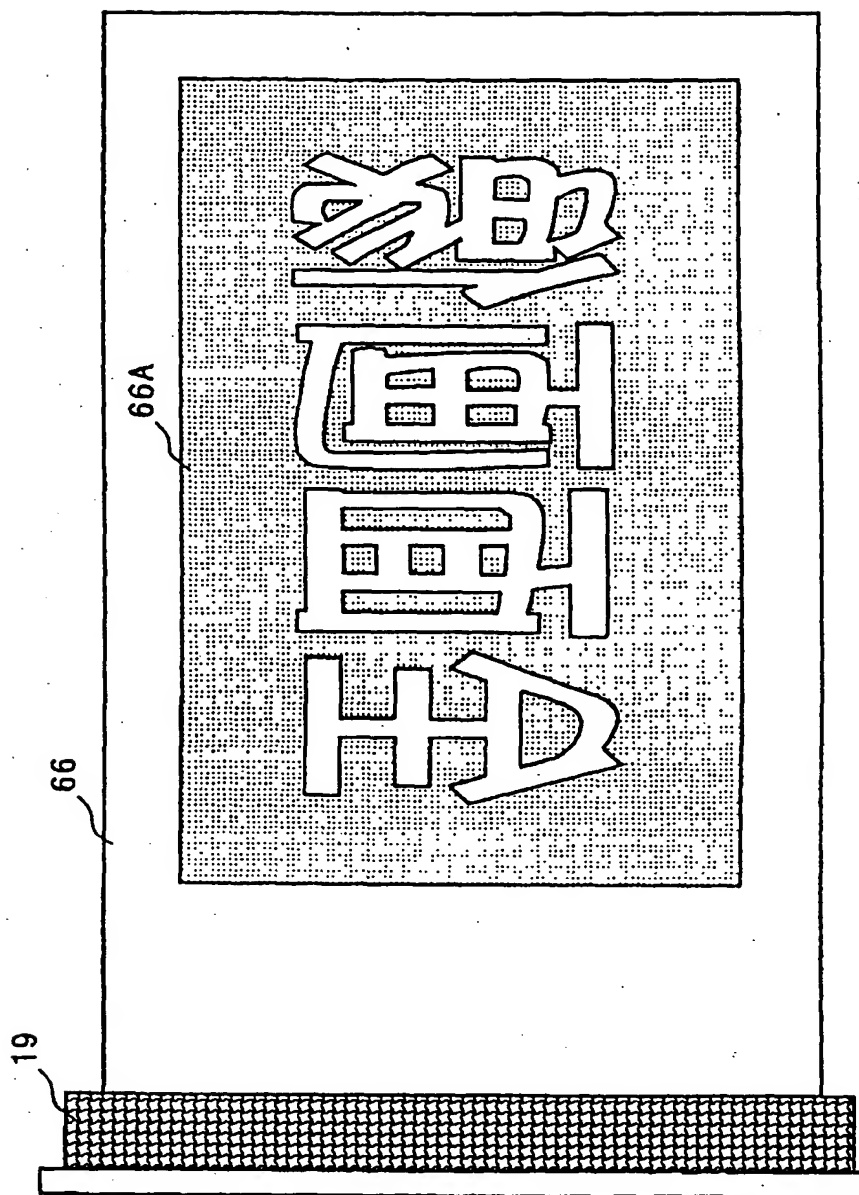


FIG. 12

103

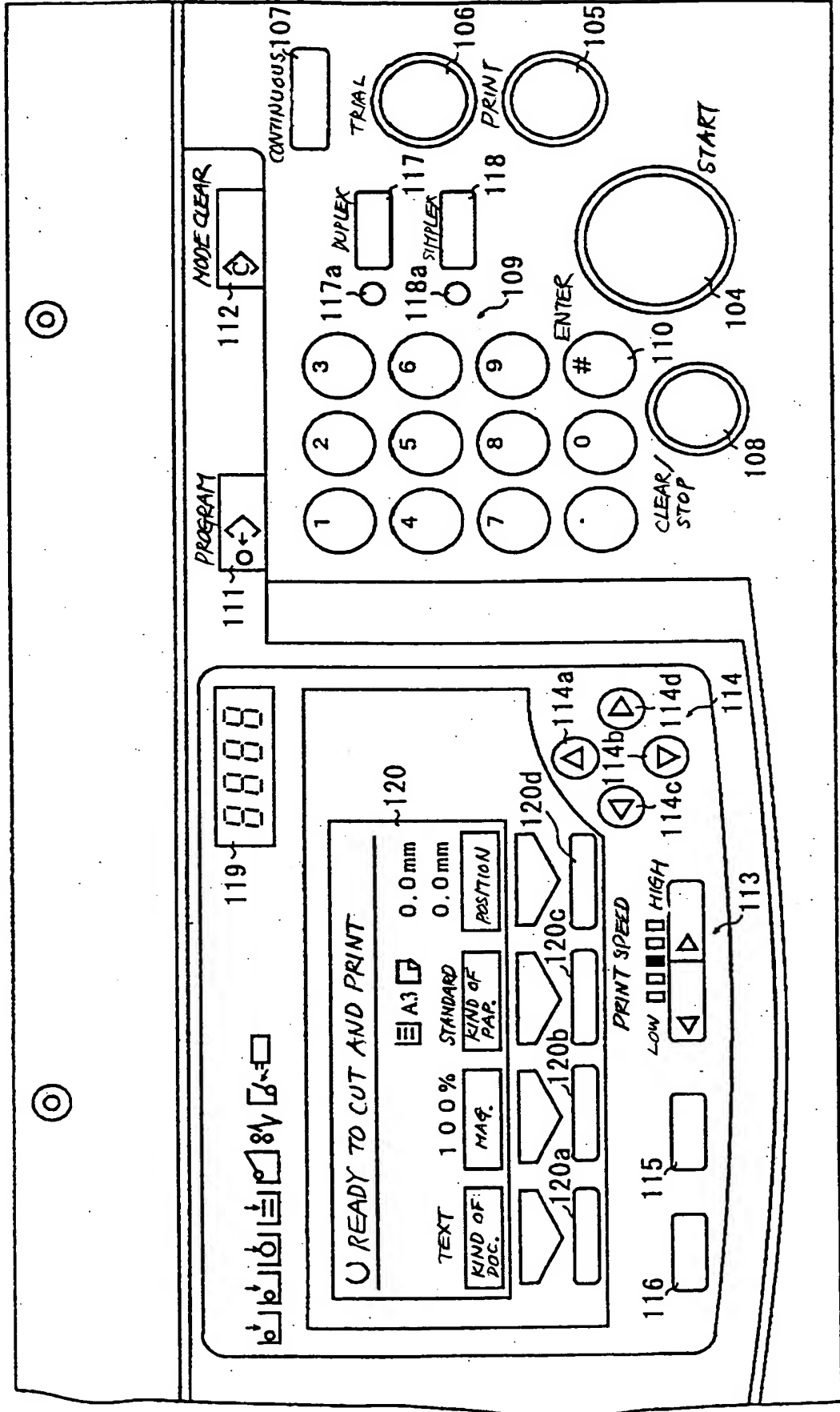


FIG. 13

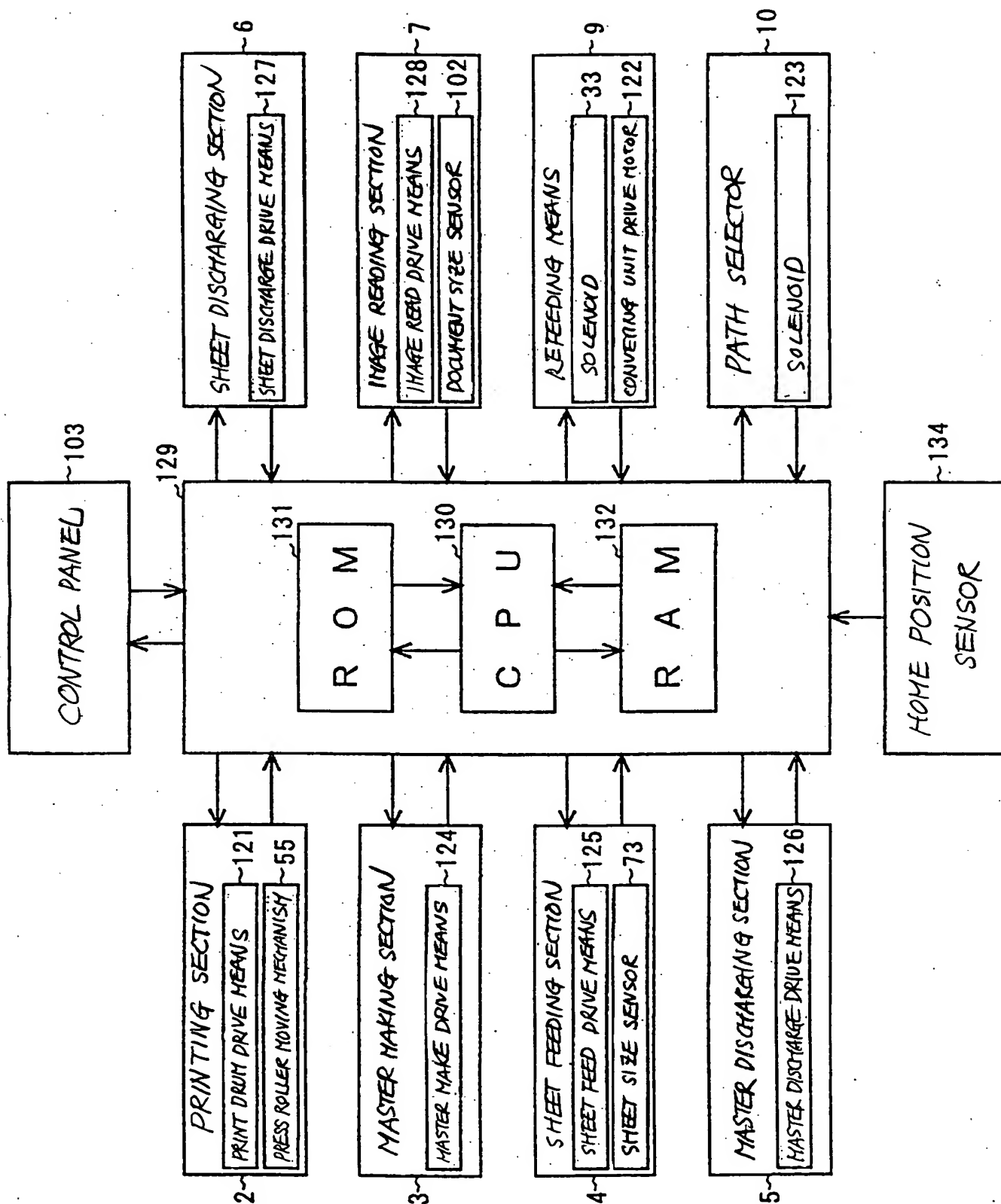


FIG. 14

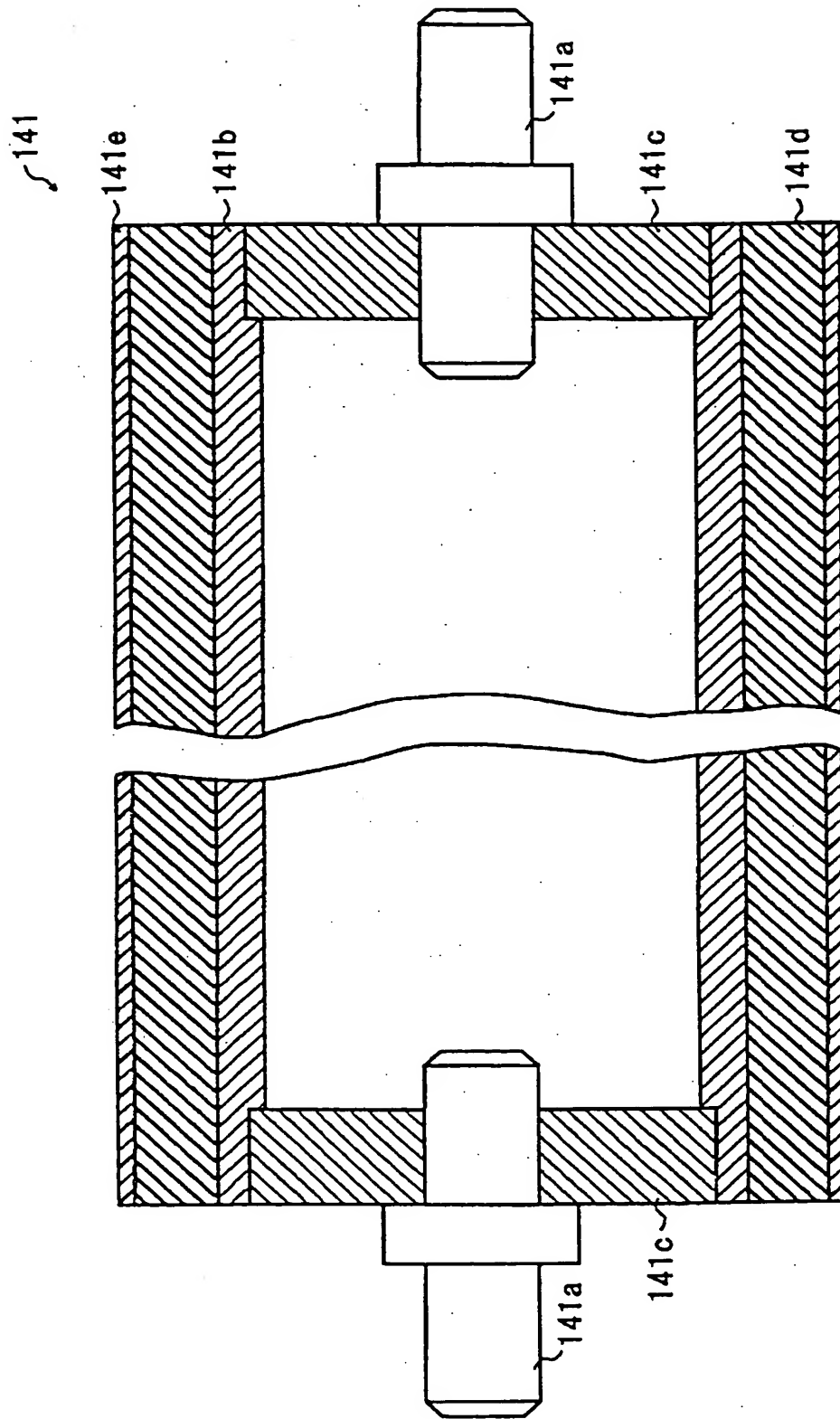


FIG. 15

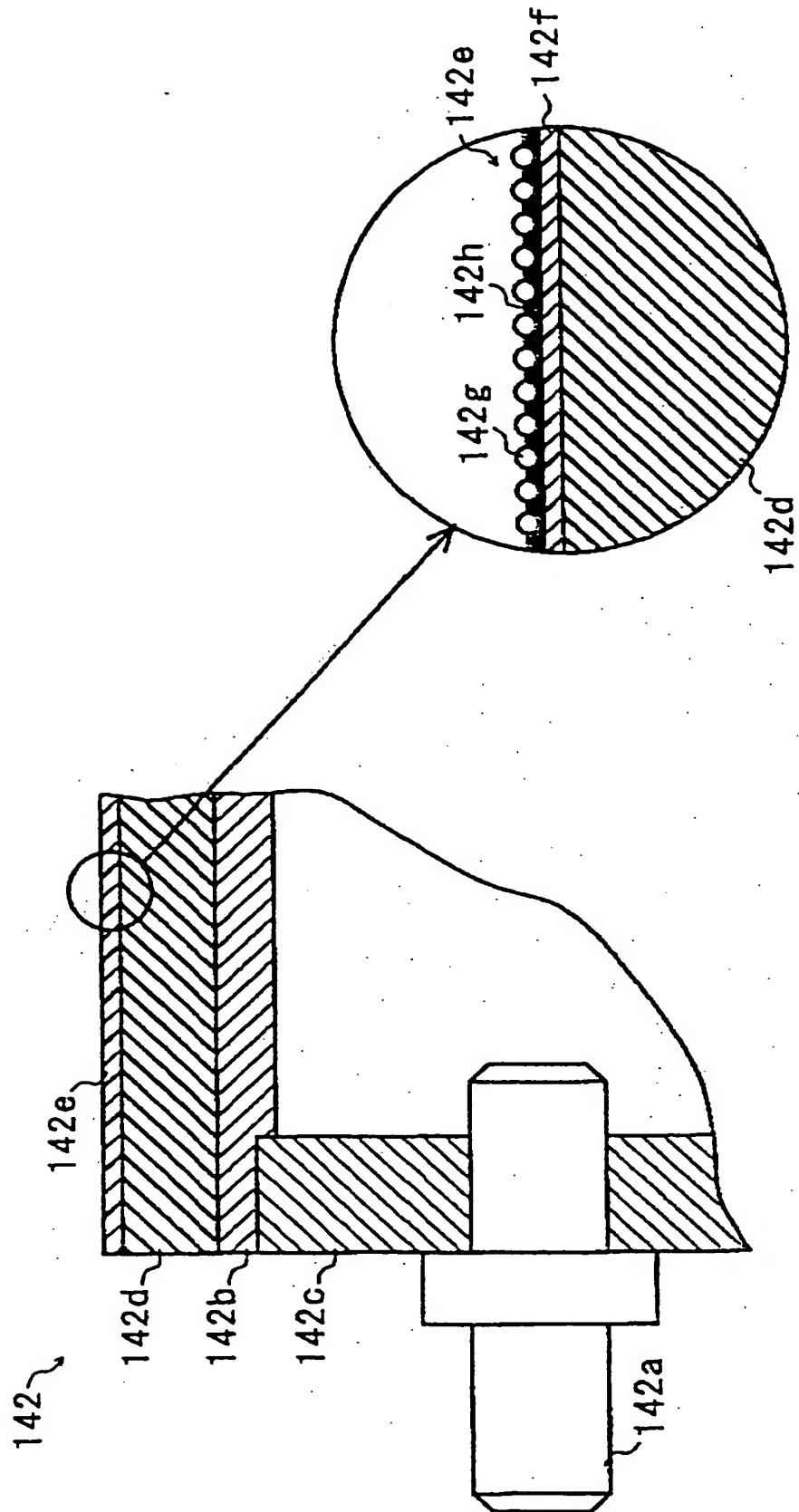


FIG. 16

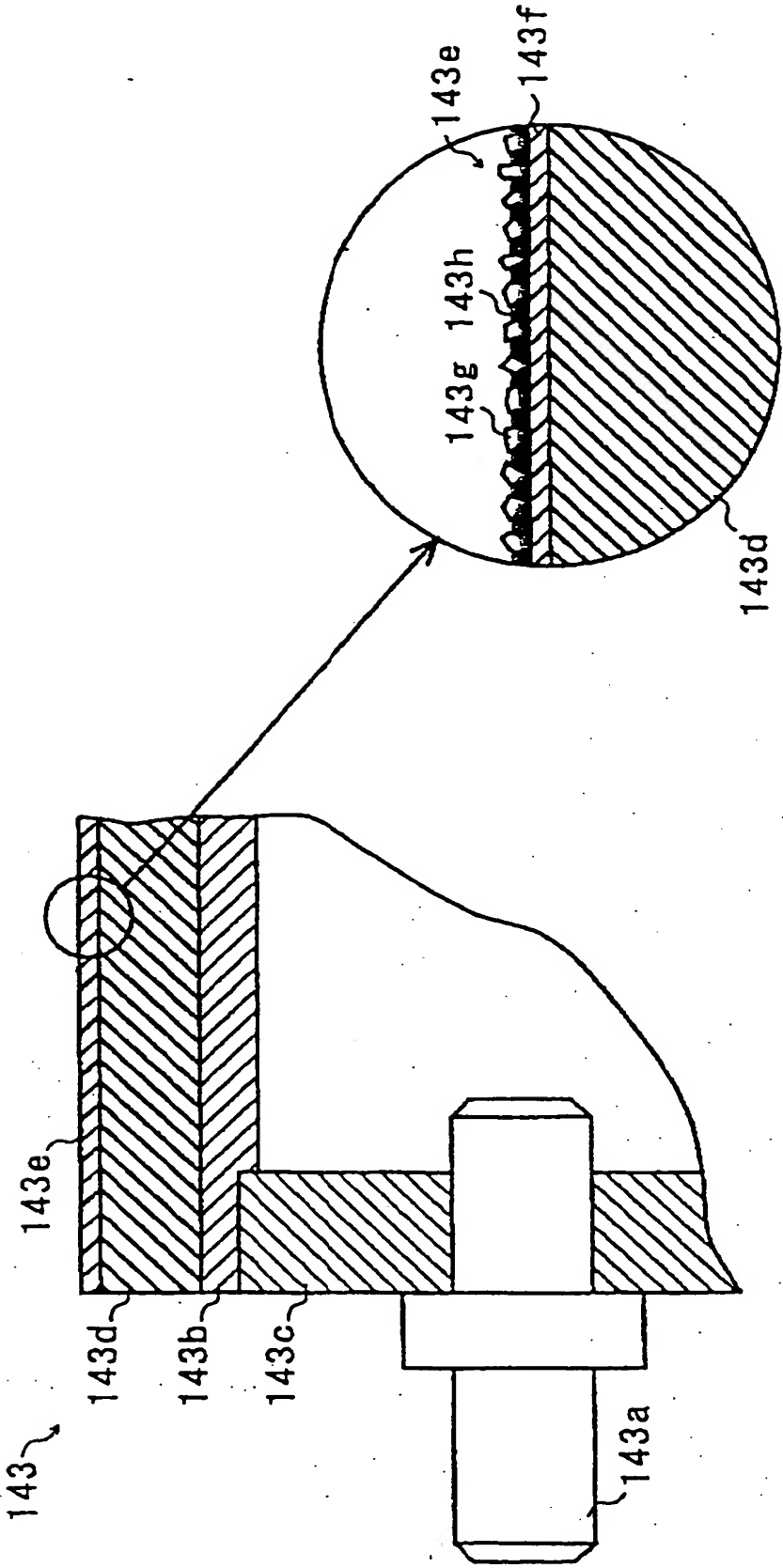


FIG. 17

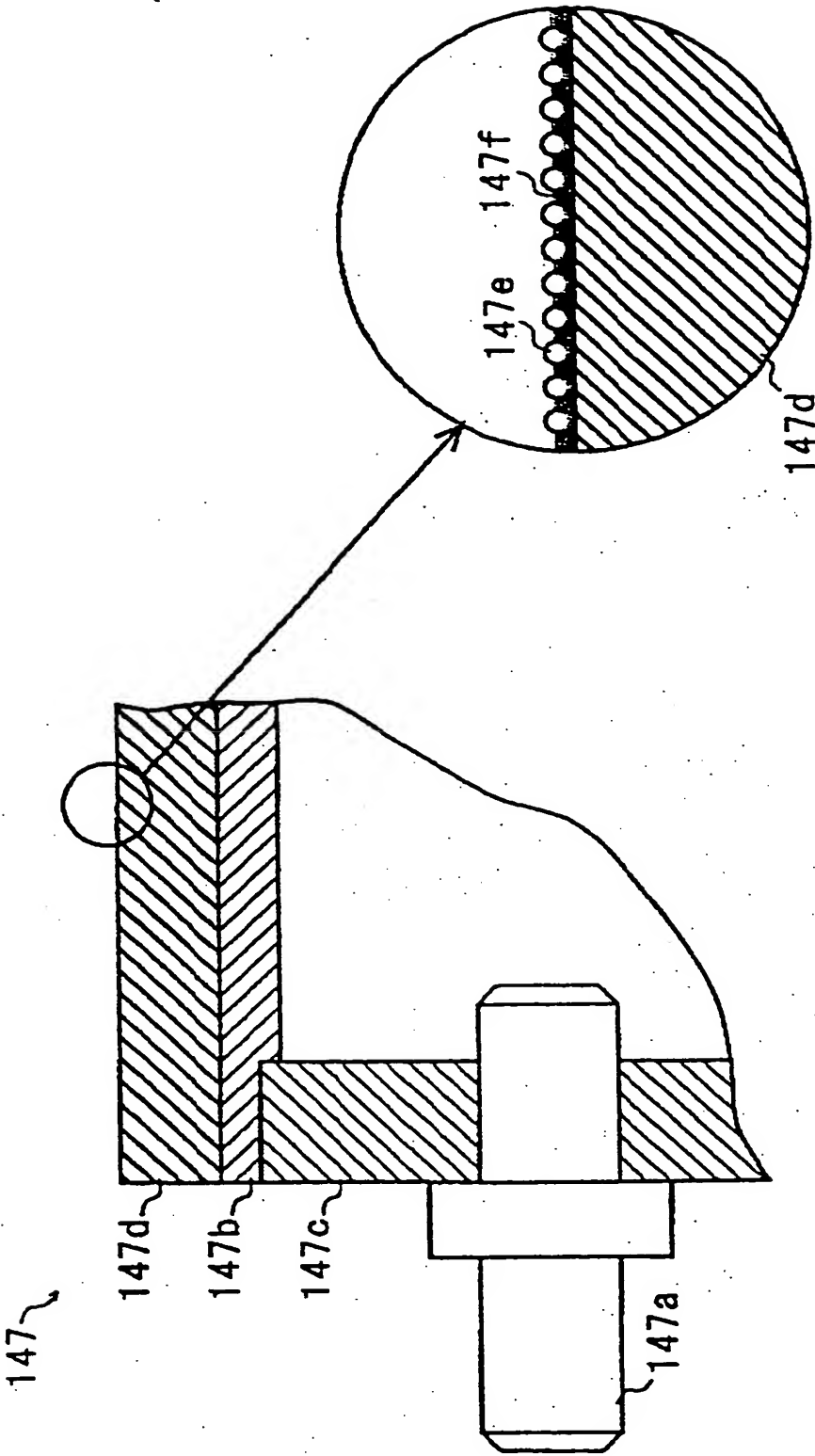


FIG. 18

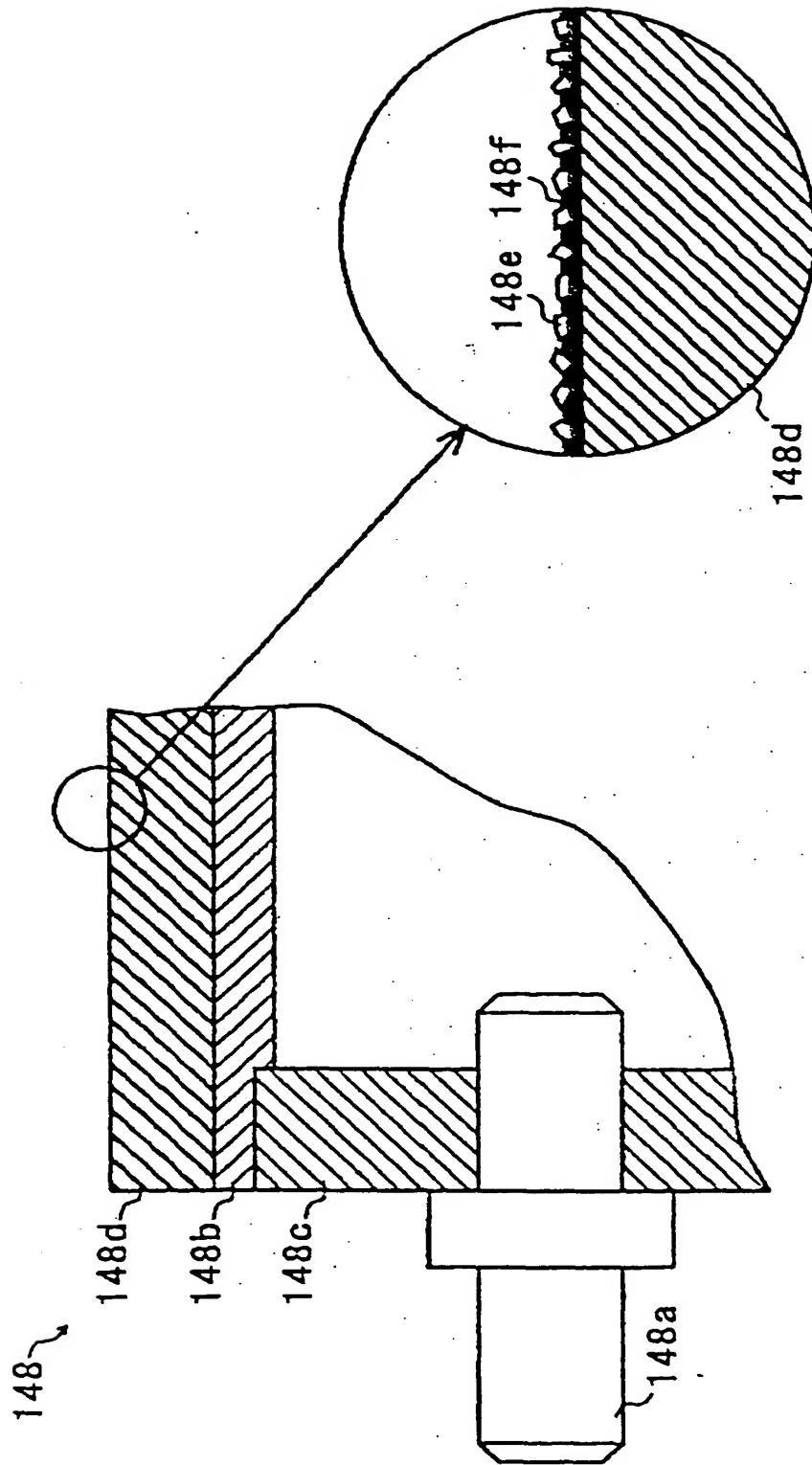


FIG. 19

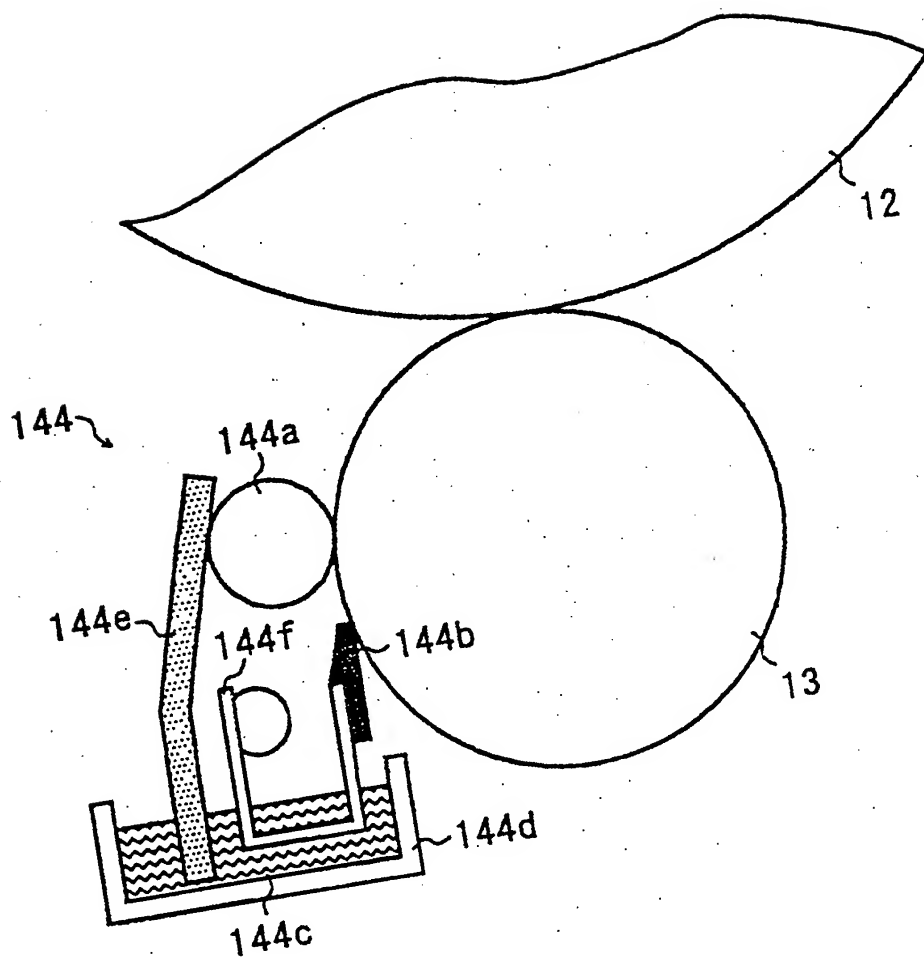


FIG. 20

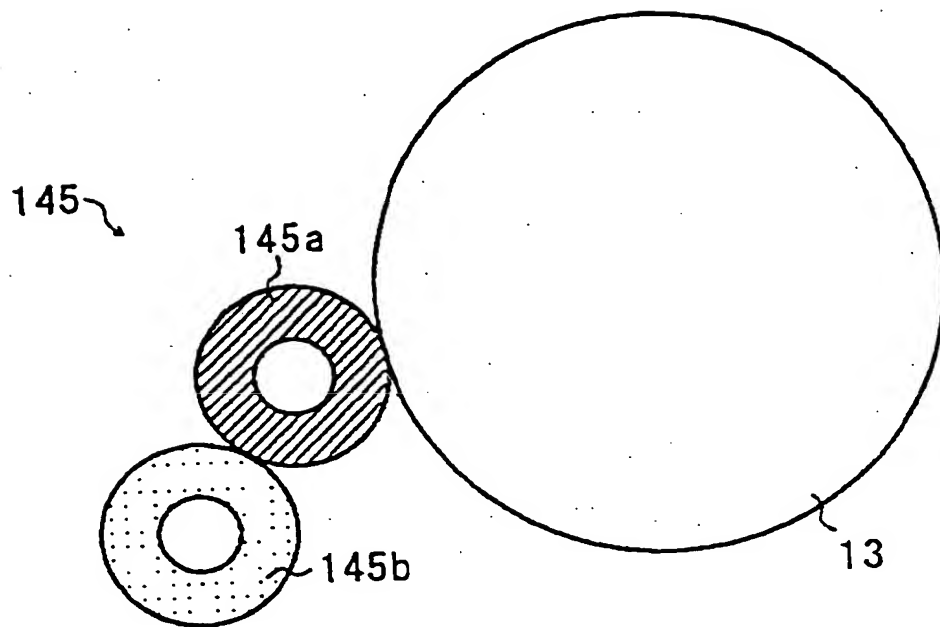


FIG. 21

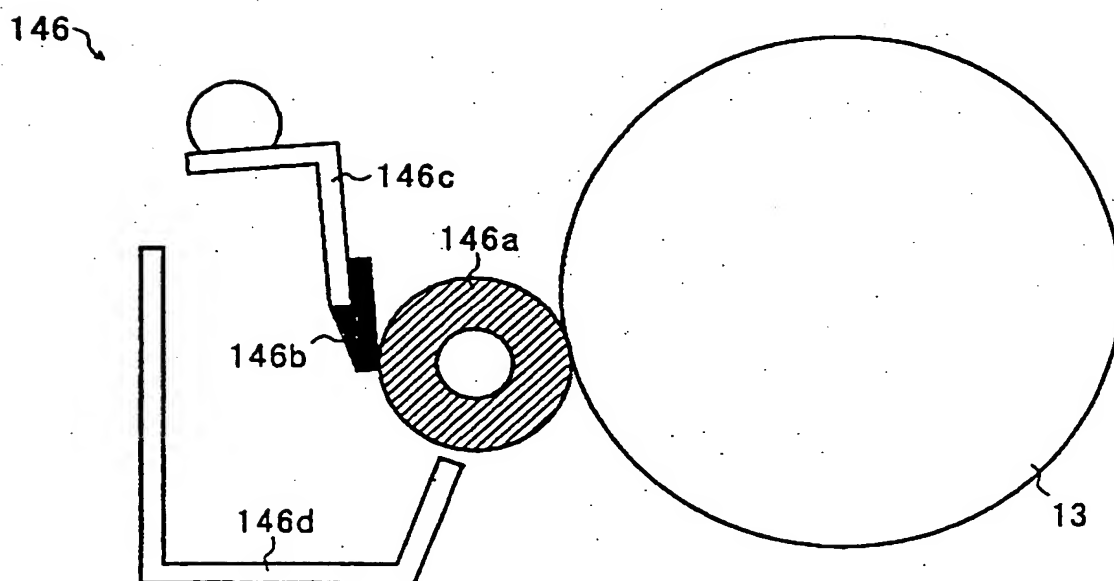


FIG. 22

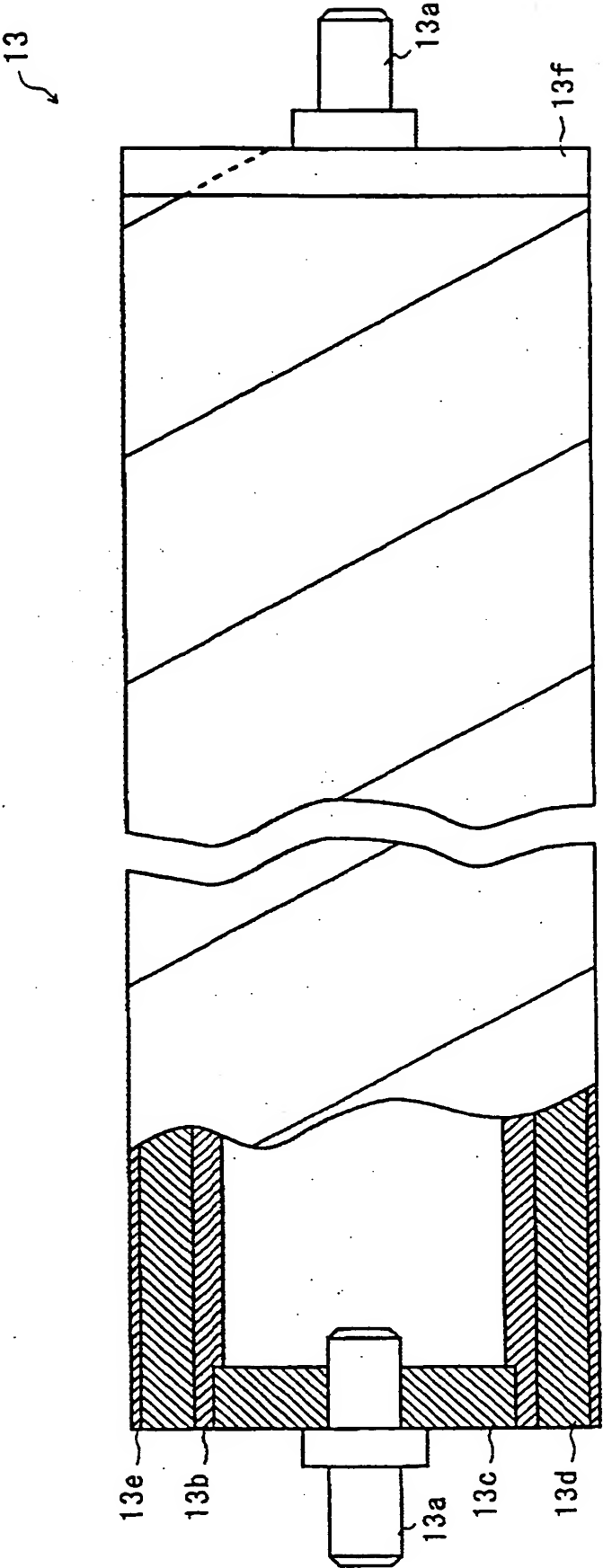


FIG. 23

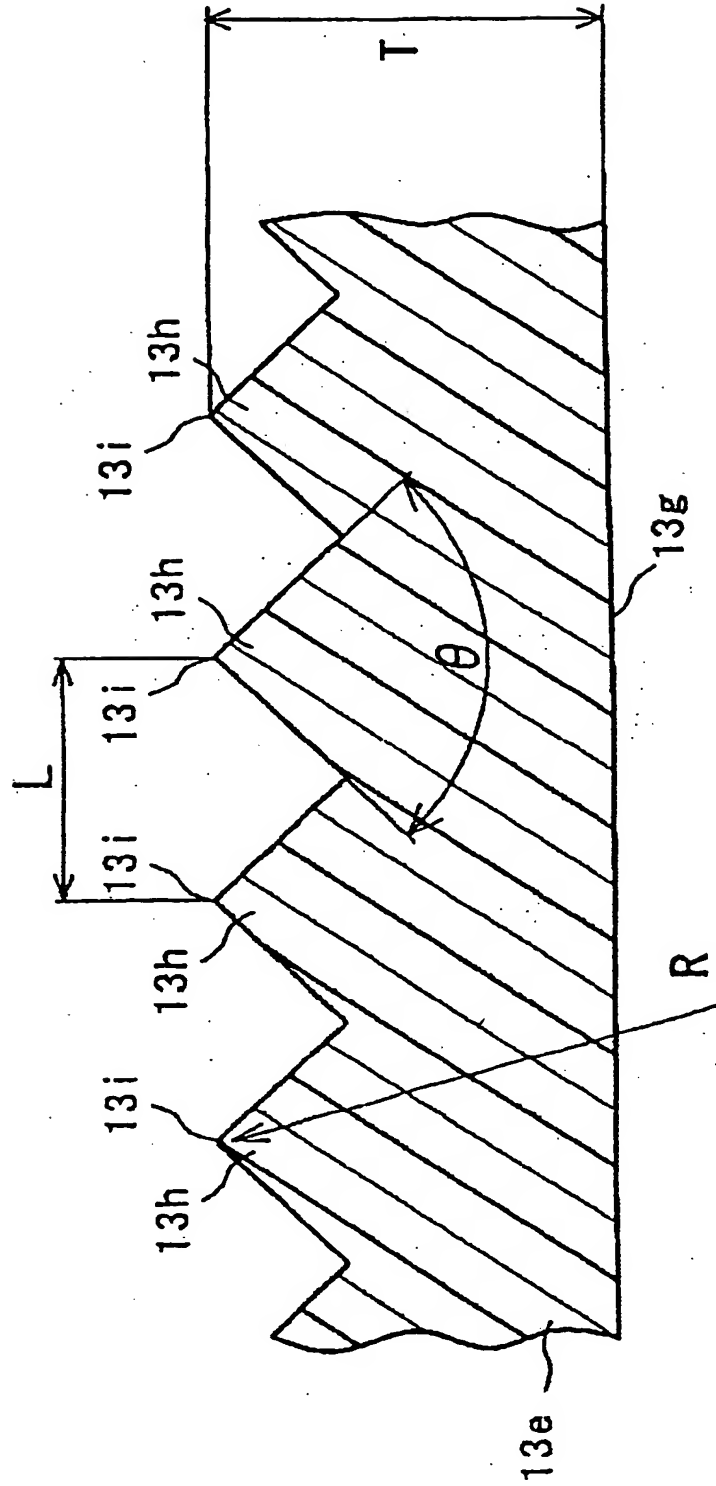


FIG. 24

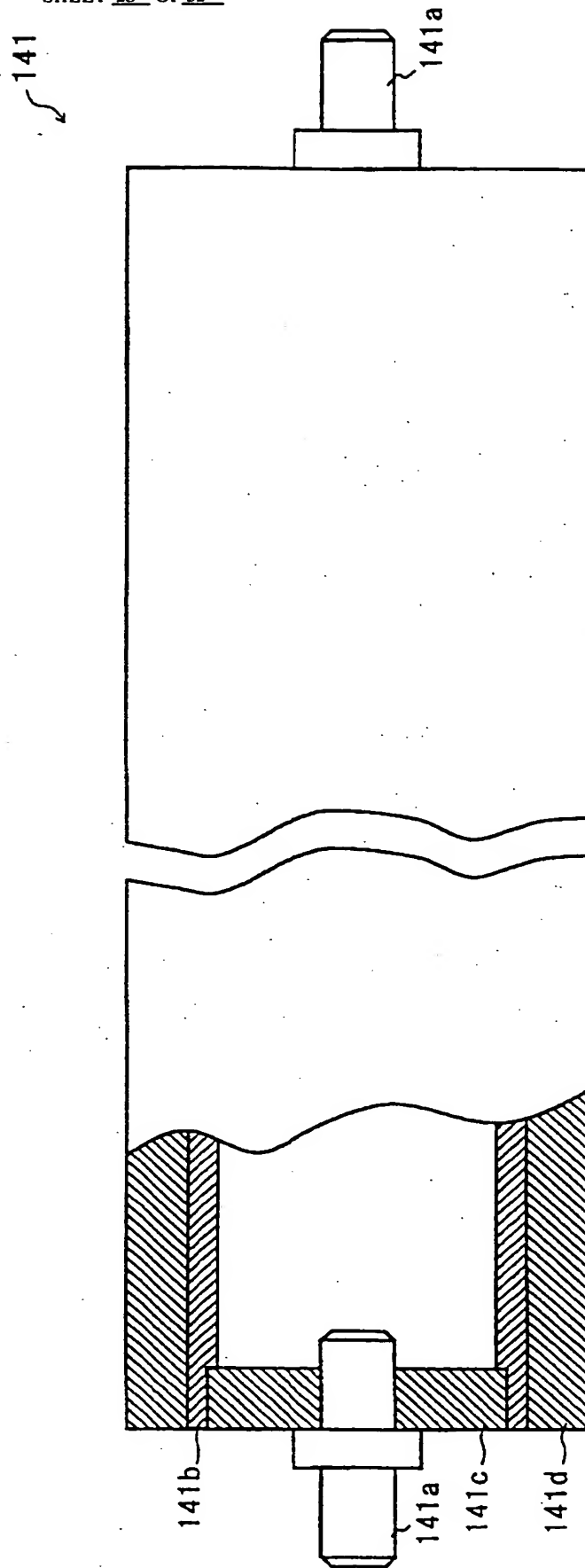


FIG. 25

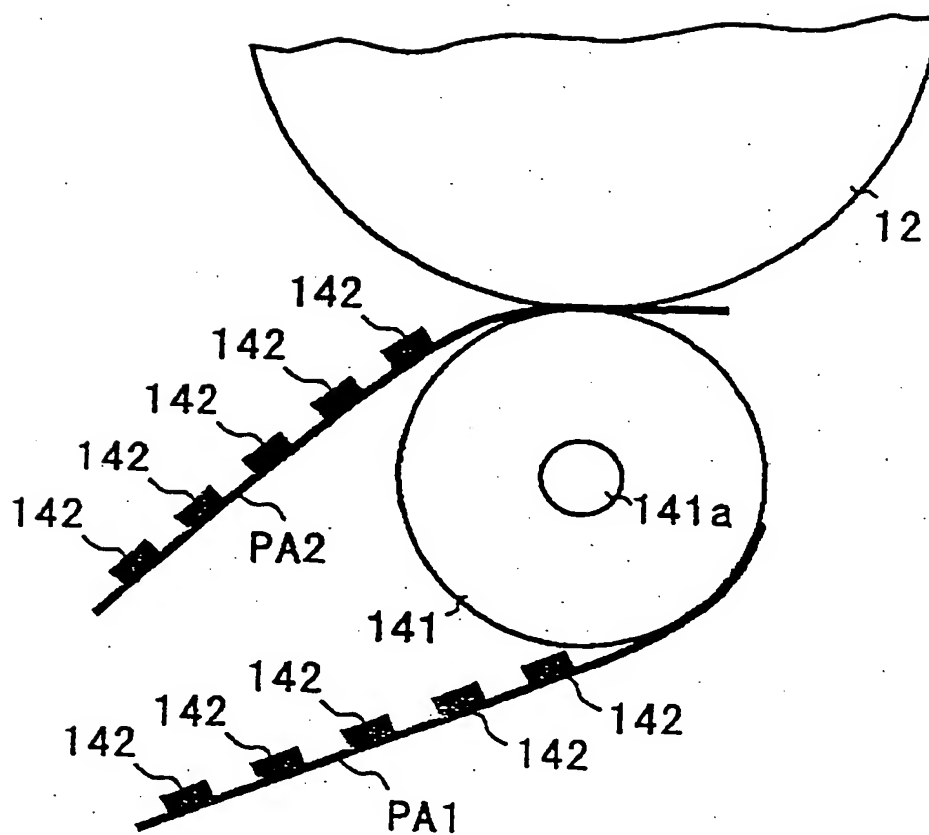


FIG. 26

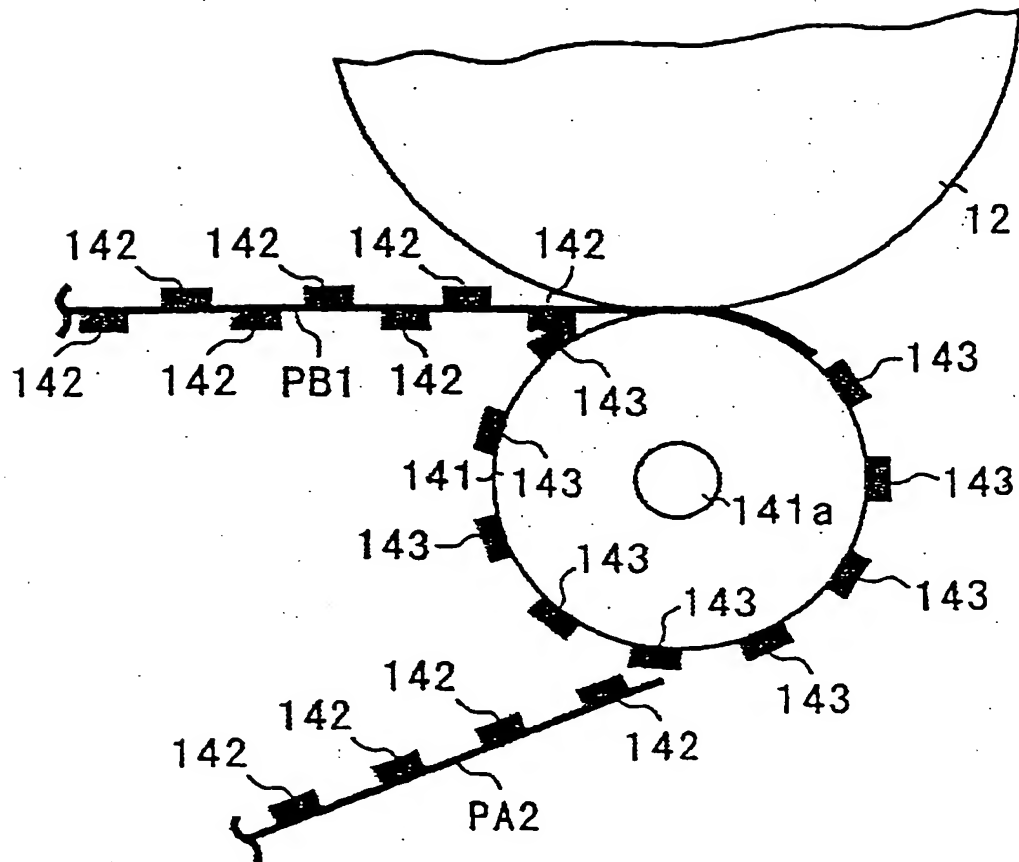


FIG. 27

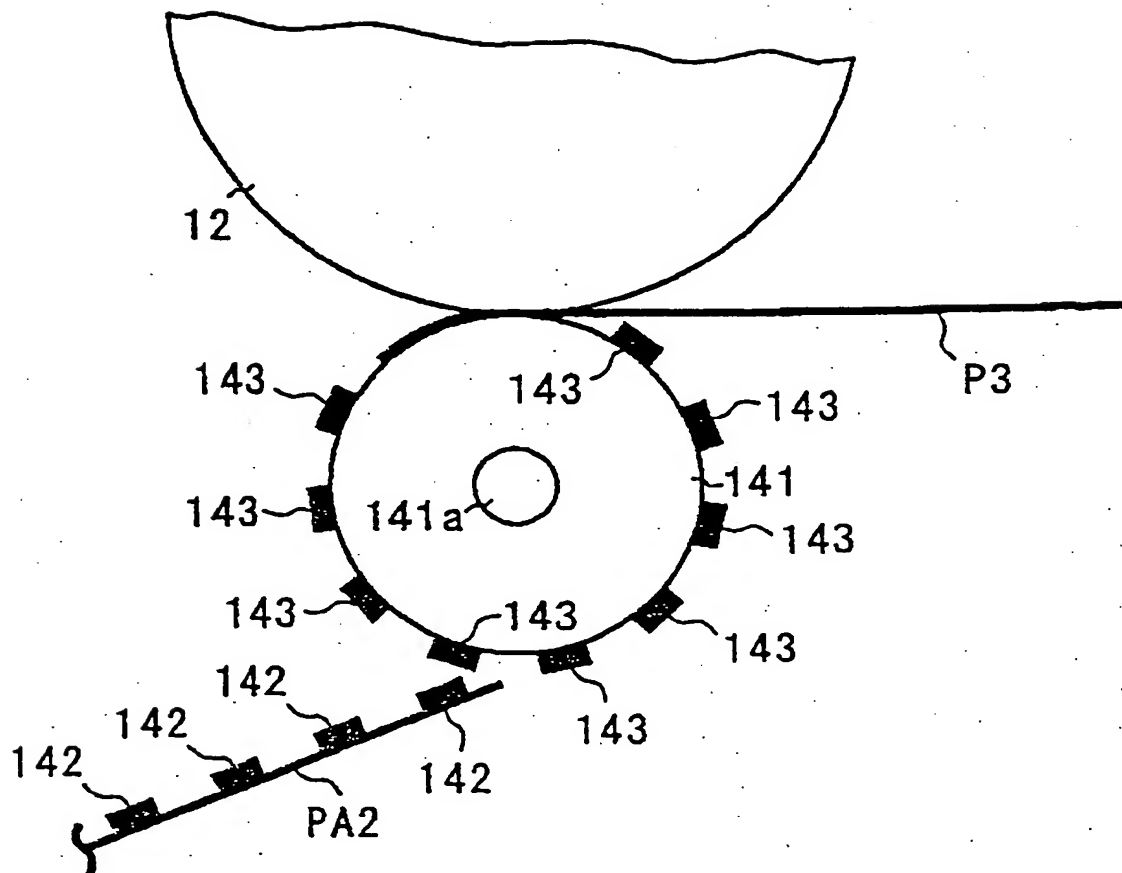


FIG. 28

	PEAK RADIUS	PEAK ANGLE	PITCH	SMEARING	IMAGE QUALITY
A	0.05	90	0.30	X	⊙
B	0.03	120	0.30	X	⊙
C	0.03	90	0.50	⊙	X
D	0.04	100	0.40	○	○
E	0.03	90	0.30	⊙	⊙
F	0.00	90	0.30	⊙	⊙
G	0.03	70	0.30	⊙	⊙
H	0.03	90	0.10	⊙	⊙
I	0.03	60	0.30	⊙	⊙
J	0.03	90	0.05	X	⊙

ESTIMATE RESULT SMEARING X: CONSPICUOUS ○: NOT CONSPICUOUS ⊙ ALMOST NONE
IMAGE QUALITY X: NO GOOD ○: ACCEPTABLE ⊙ GOOD

FIG. 29

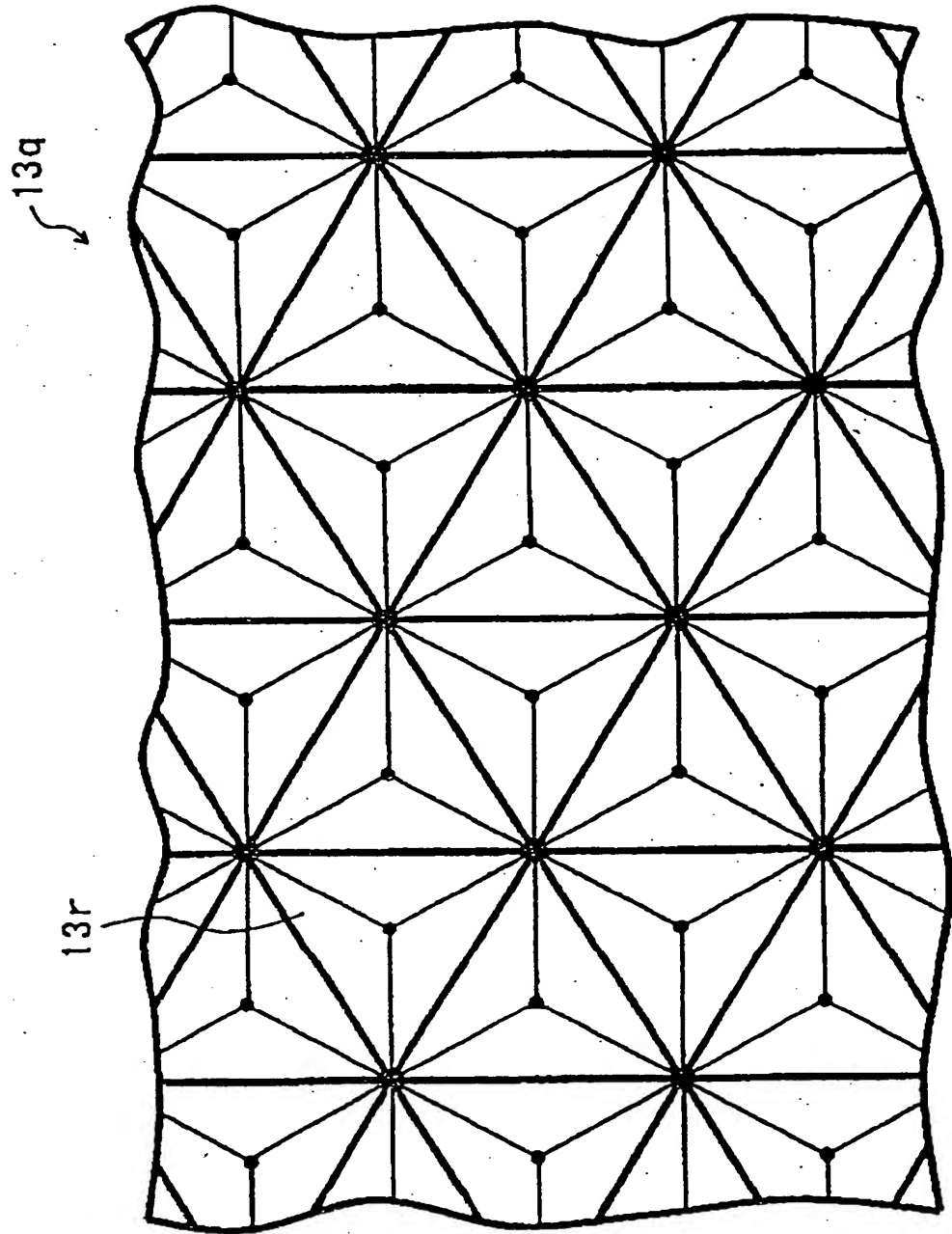


FIG. 30

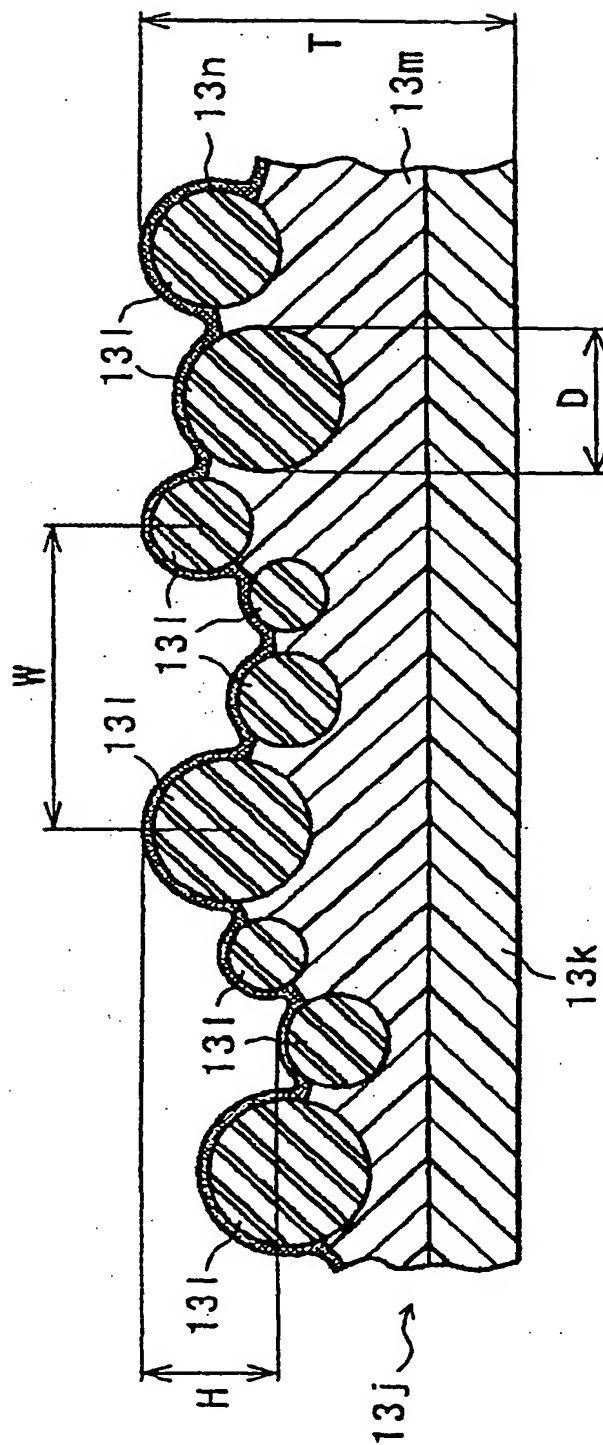


FIG. 31

	MEAN DIAMETER	MAX DIFFERENCE	MEAN PITCH	SHEARING	IMAGE QUALITY
A	0.12	0.05	0.40	X	⊙
B	0.06	0.12	0.40	⊙	X
C	0.06	0.05	0.50	⊙	X
D	0.10	0.03	0.15	○	○
E	0.08	0.05	0.40	⊙	⊙
F	0.04	0.05	0.40	⊙	⊙
G	0.08	0.10	0.40	⊙	⊙
H	0.08	0.05	0.30	⊙	⊙
I	0.03	0.05	0.40	⊙	⊙
J	0.08	0.02	0.40	X	⊙
K	0.08	0.05	0.10	X	⊙

ESTIMATION RESULT SHEARING X: CONSPICUOUS ○ NOT CONSPICUOUS ⊙ ALMOST NONE

IMAGE QUALITY X: NO GOOD ○ ACCEPTABLE ⊙ GOOD

FIG. 32

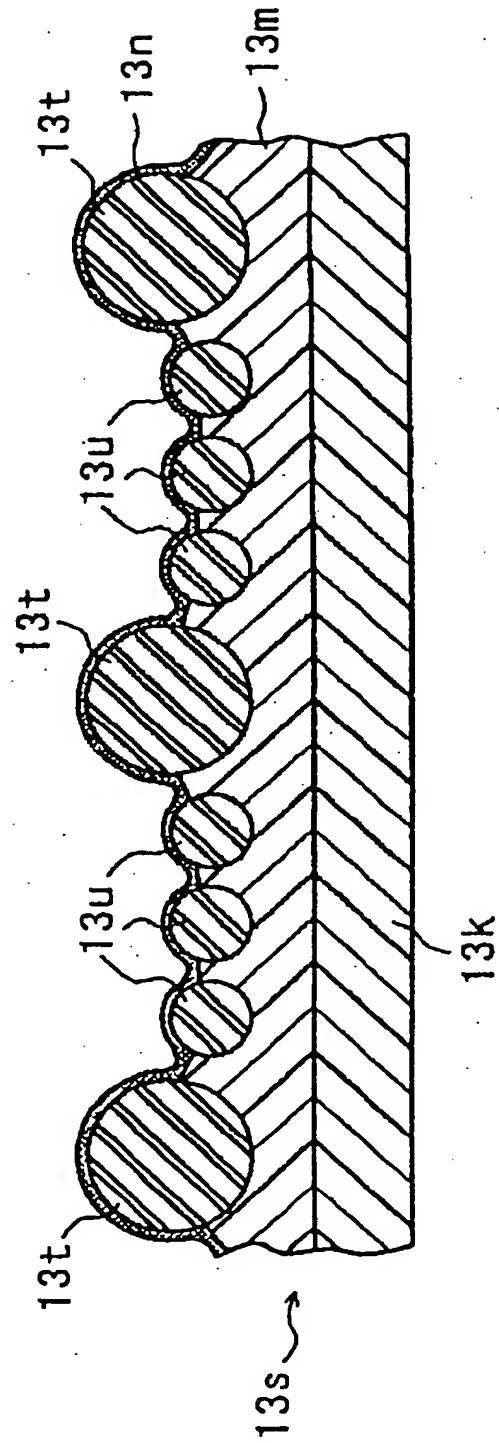


FIG. 33

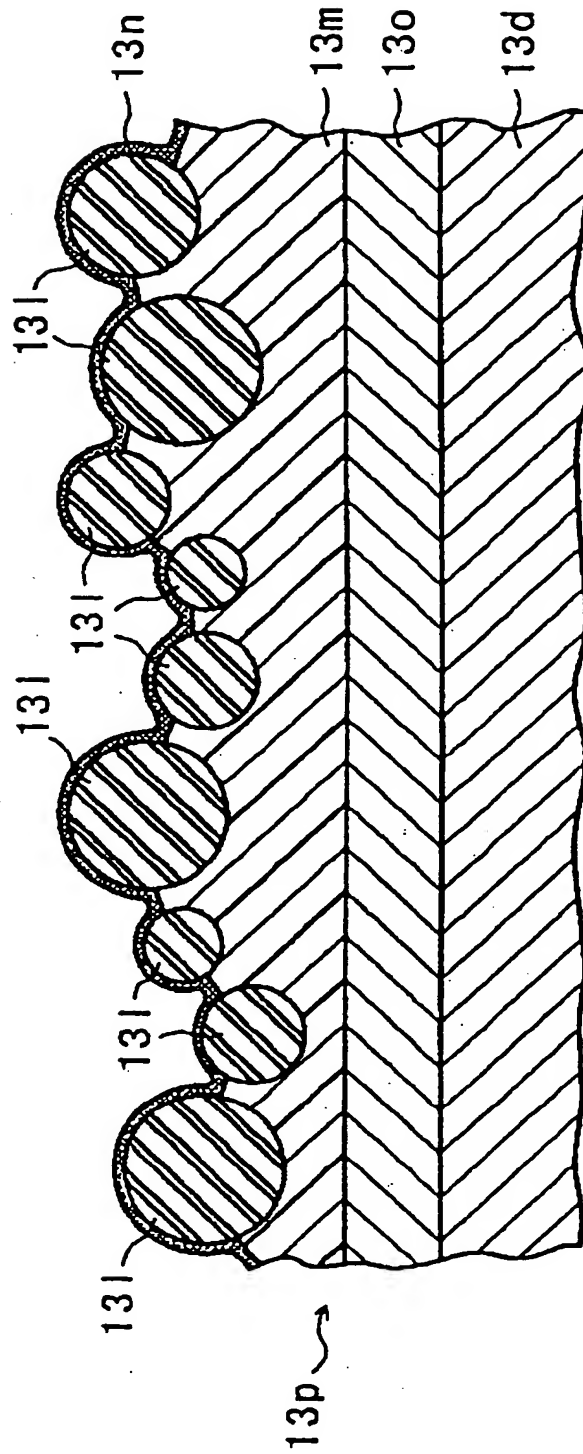


FIG. 34

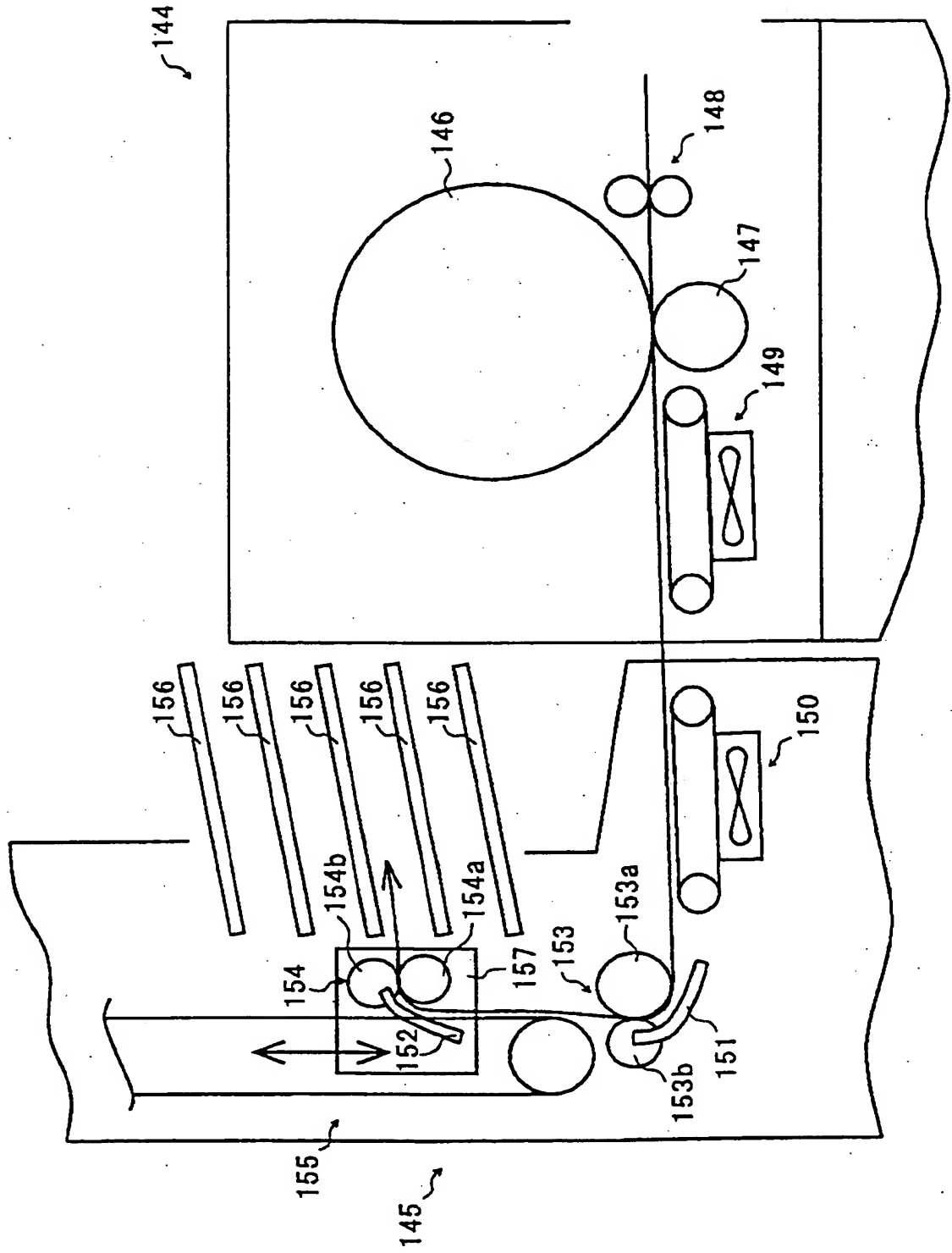


FIG. 35

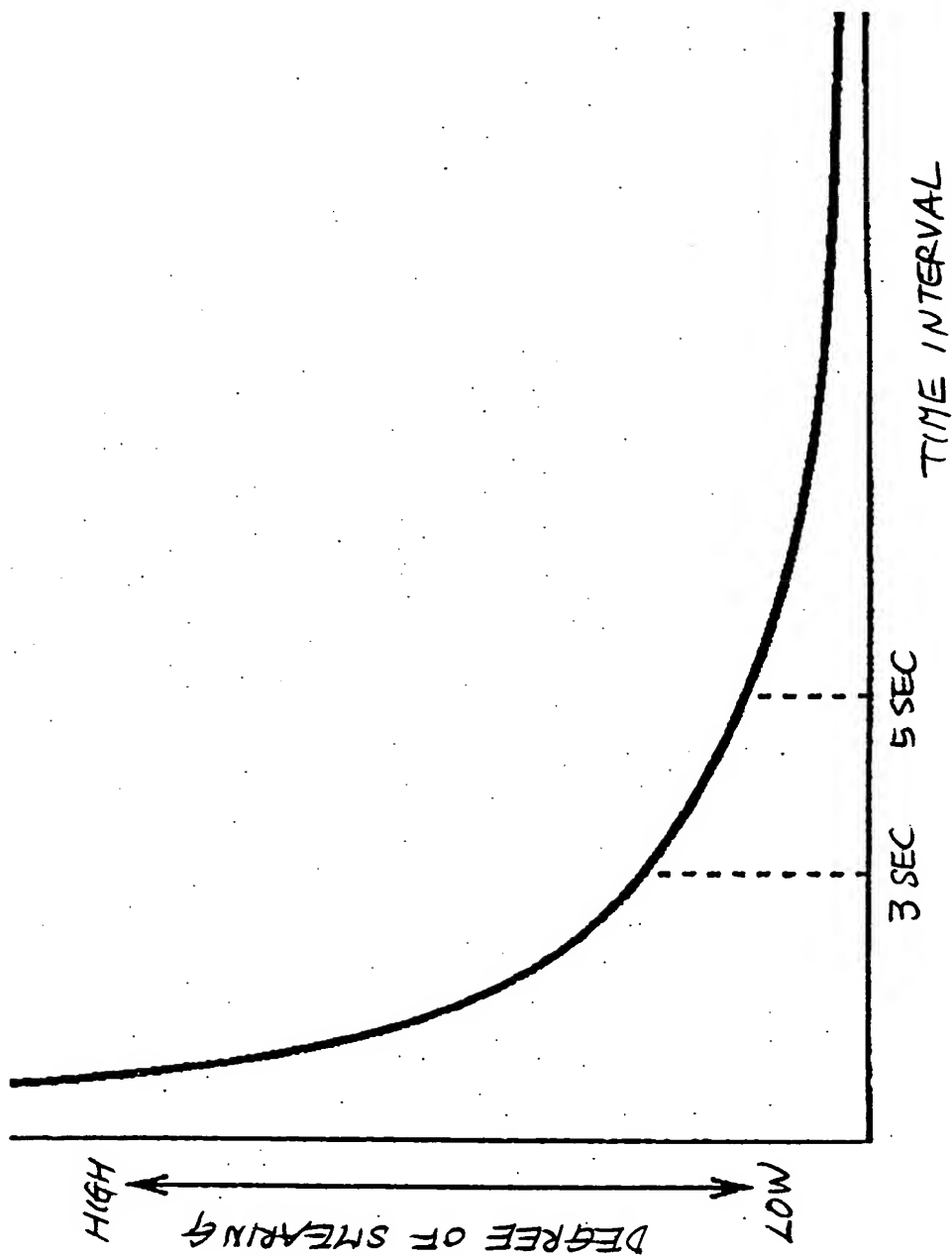


FIG. 36

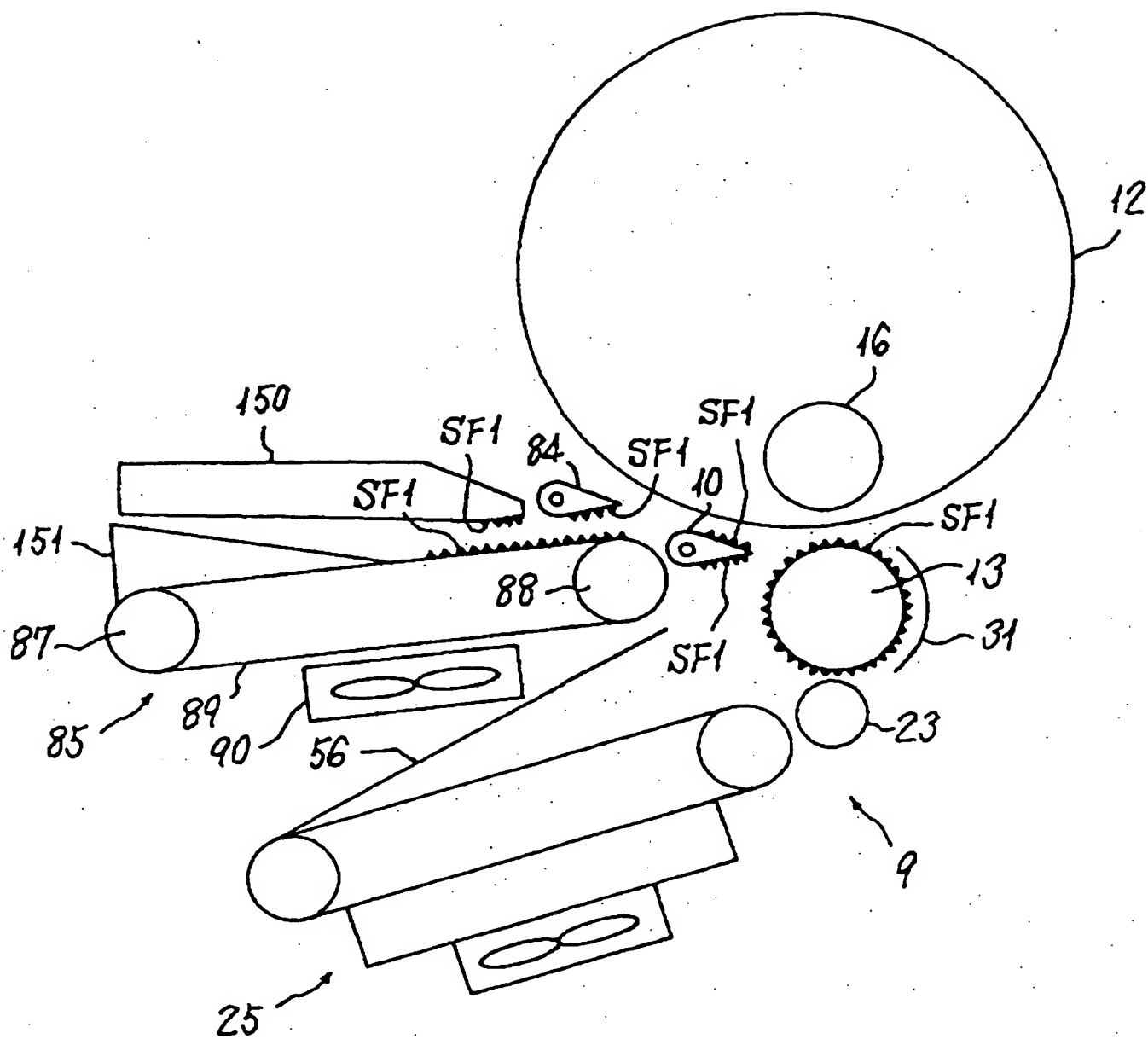


FIG. 37

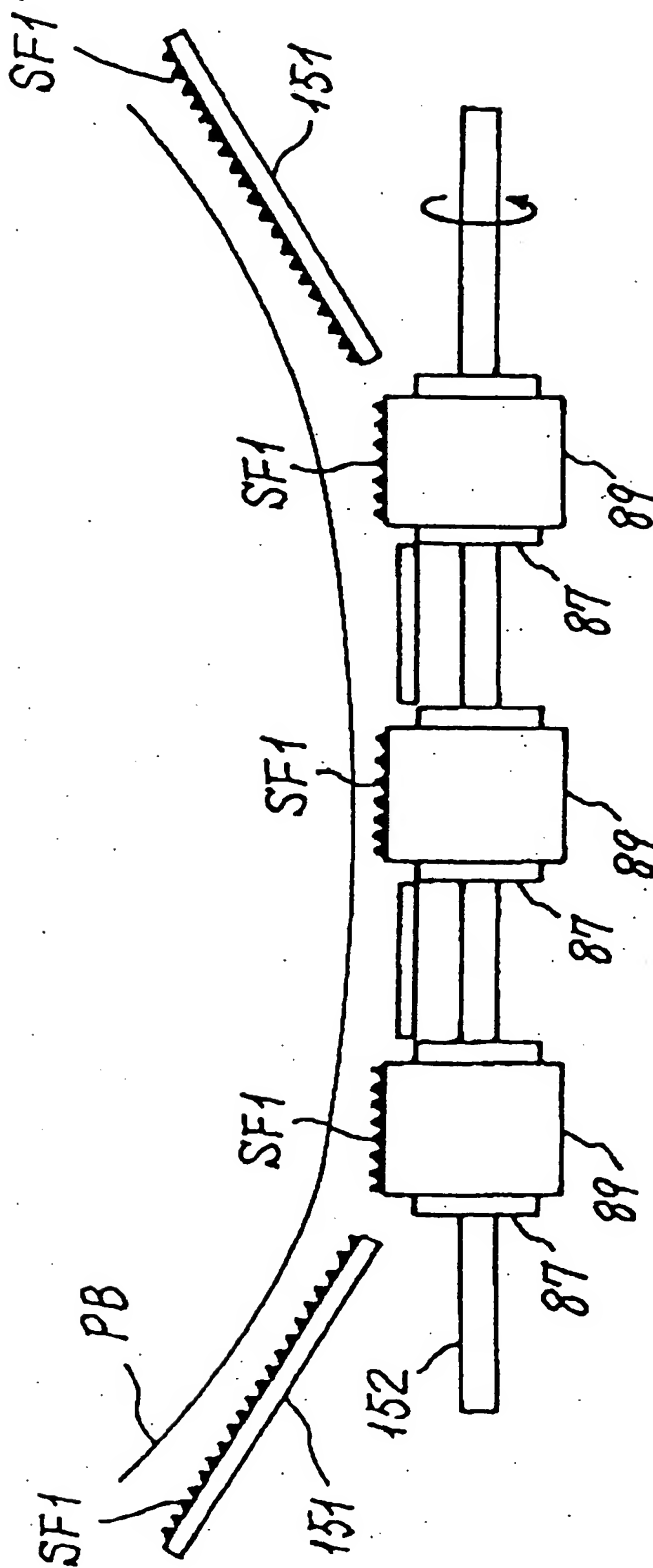


FIG. 38

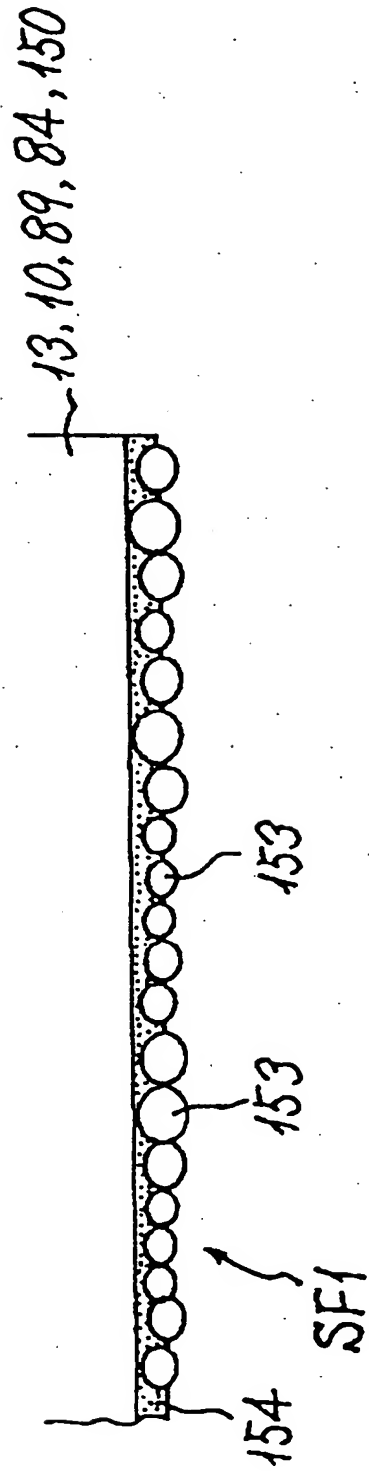


FIG. 41

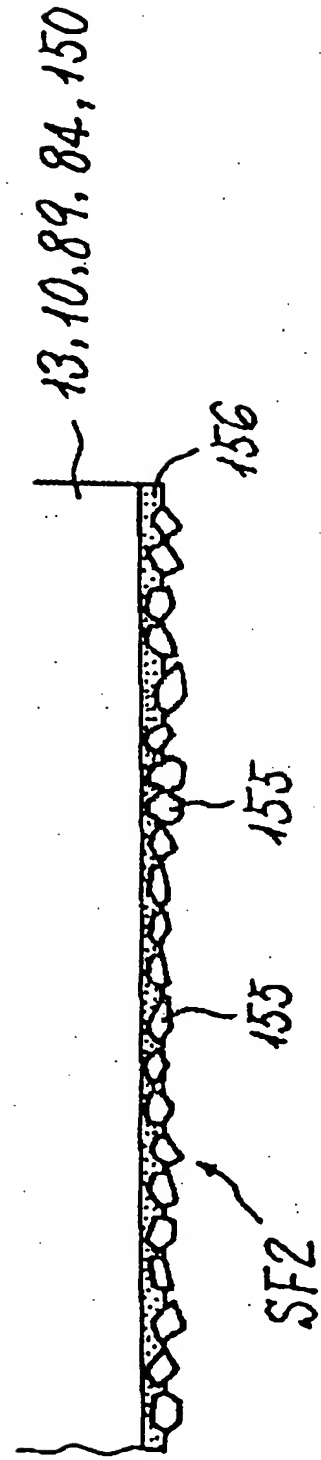


FIG. 39

BEAM DIAMETER (μm)	SMEARING RANK	NOTE
10	3.25(X)	SMEARING
20	4.50(O)	GOOD
50	4.50(O)	GOOD
100	4.25(O)	GOOD
150	4.00(O)	GOOD
200	3.75(X)	SPOTS
250	3.50(X)	SPOTS

* RANK 4.00 AND ABOVE ARE OK

* GLASS BEADS ARE USED

FIG. 40

MATERIAL	SHEARING RANK	DURABILITY	NOTE
GLASS	4.50(O)	O	SOME PAPER DUST
CERAMIC	4.50(O)	O	SOME PAPER DUST
RUBBER A	3.50(X)	Δ	CRUSH & WEAR
RUBBER B	4.25(O)	X	CRUSH/WEAR/FALL
RESIN	4.50(O)	X	WEAR/FALL

* BEAD DIAMETER OF 50 μ m

FIG. 42

GRAIN SIZE	SMEARING RANK	NOTE
100	3.25(X)	SPOTS/BREAKAGE OF THIN SHEET
250	4.50(O)	GOOD
500	4.50(O)	GOOD
1000	4.25(O)	GOOD
1500	4.00(O)	GOOD
2000	3.75(X)	RUBBING
2500	3.50(X)	RUBBING

FIG. 43

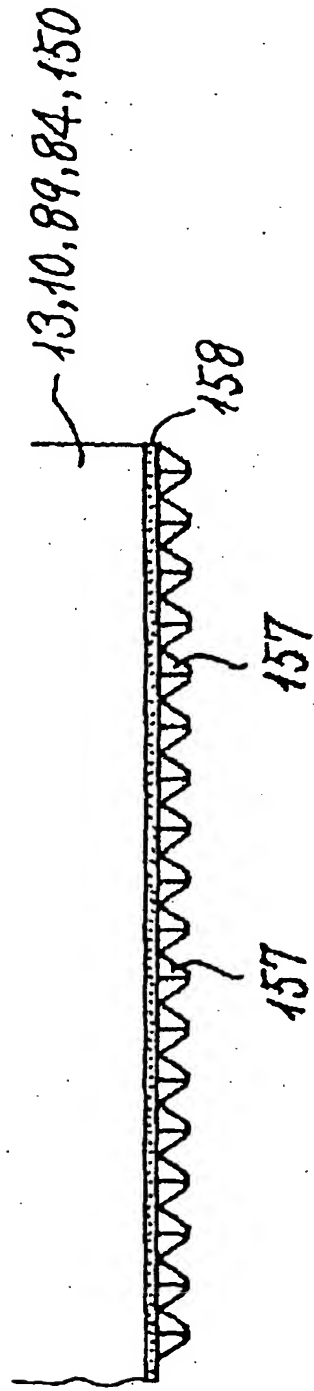


FIG. 44

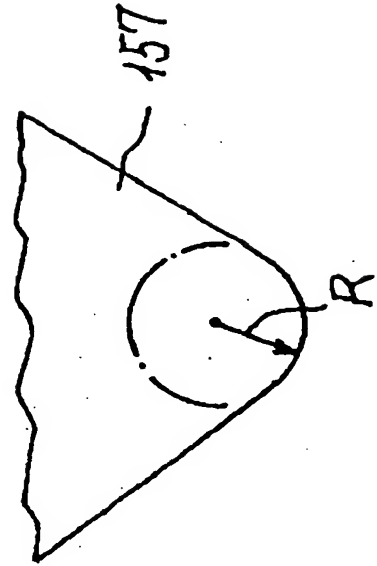


FIG. 45

		PEAK RADIUS R (μm)			NOTE
		25	50	100	
PITCH (μm)	10	Δ	X	X	RUBBING
	20	O	O	X	100[μm], RUBBING
	50	O	O	X	100[μm], RUBBING
	100	O	O	X	100[μm], RUBBING
	200	O	O	Δ	100[μm], RUBBING
	300	O	O	Δ	100[μm], RUBBING & SPOTS
	500	X	Δ	Δ	100[μm], RUBBING & SPOTS
	1000	X	X	Δ	RUBBING & SPOTS

FIG. 46

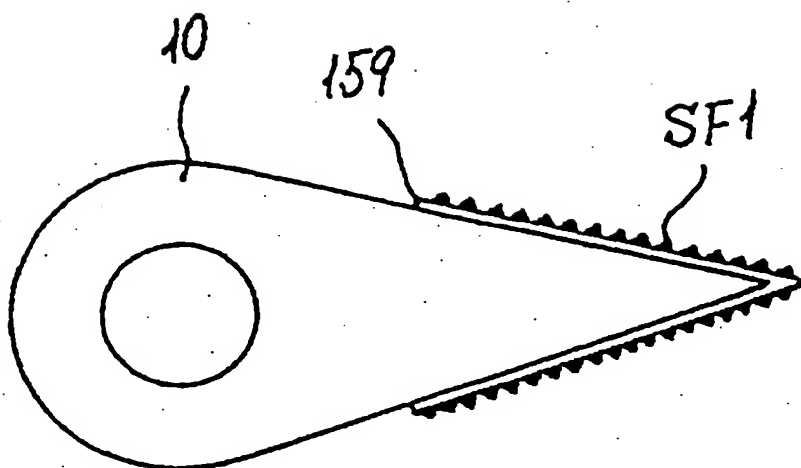


FIG. 47

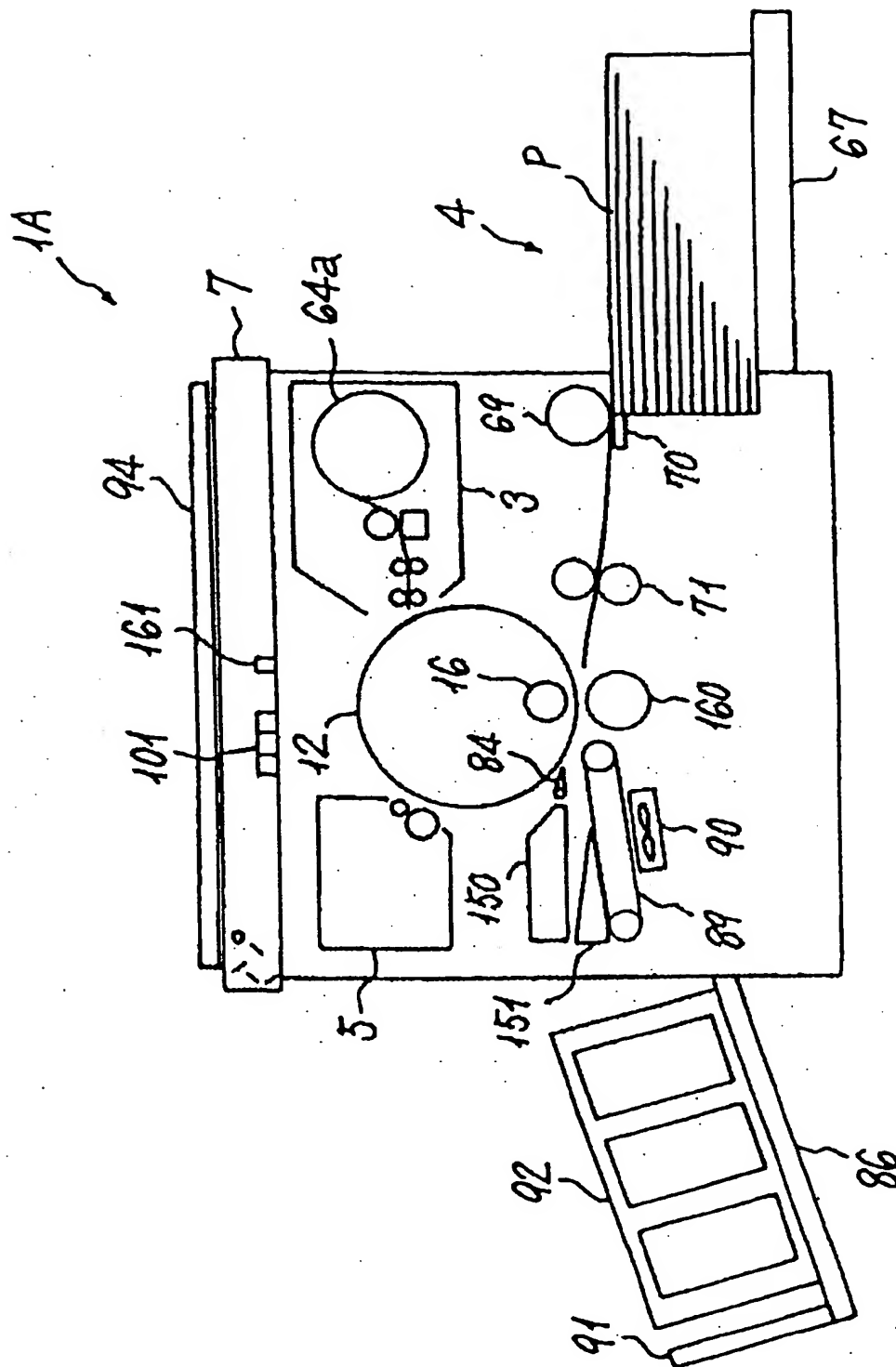
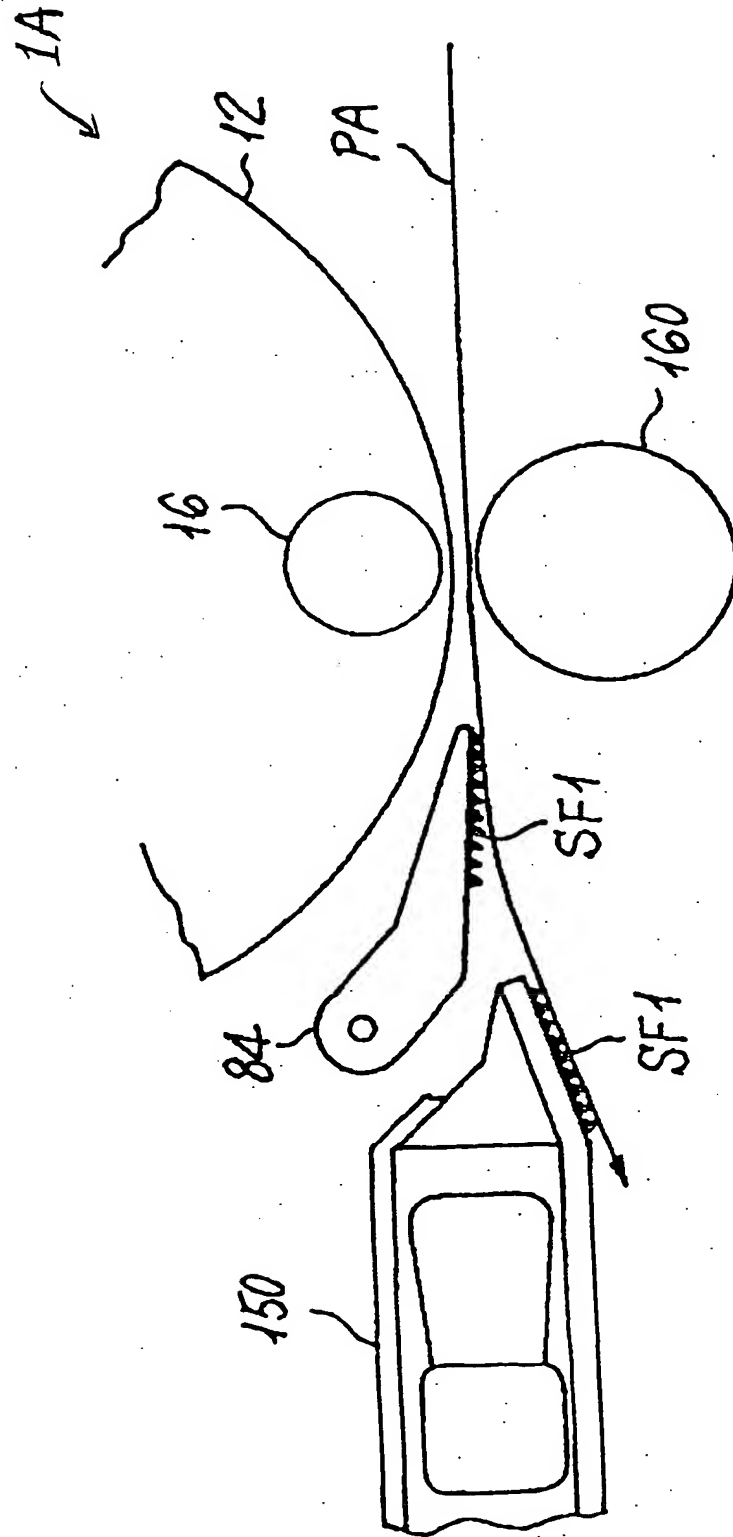


FIG. 48



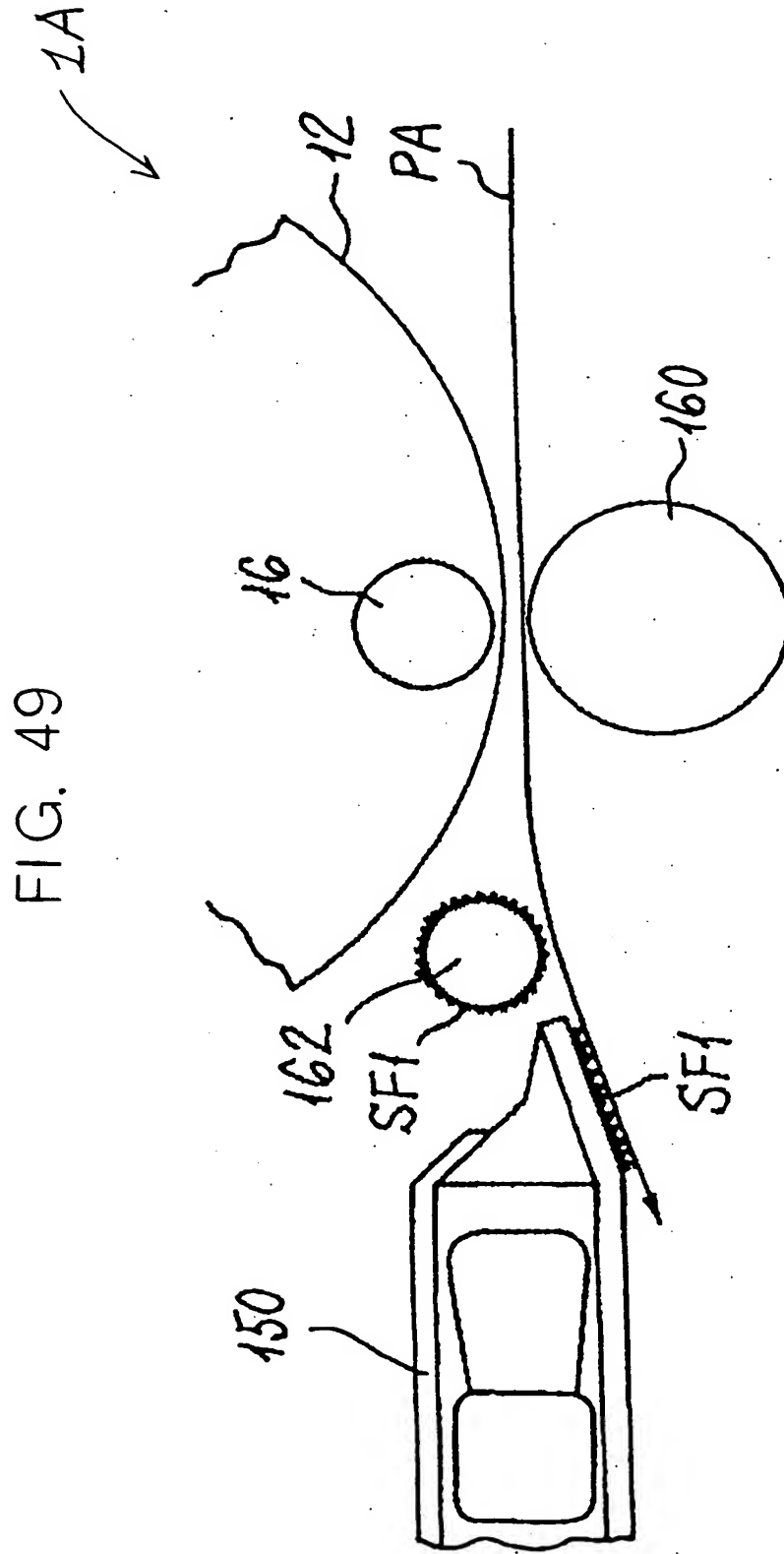


FIG. 50

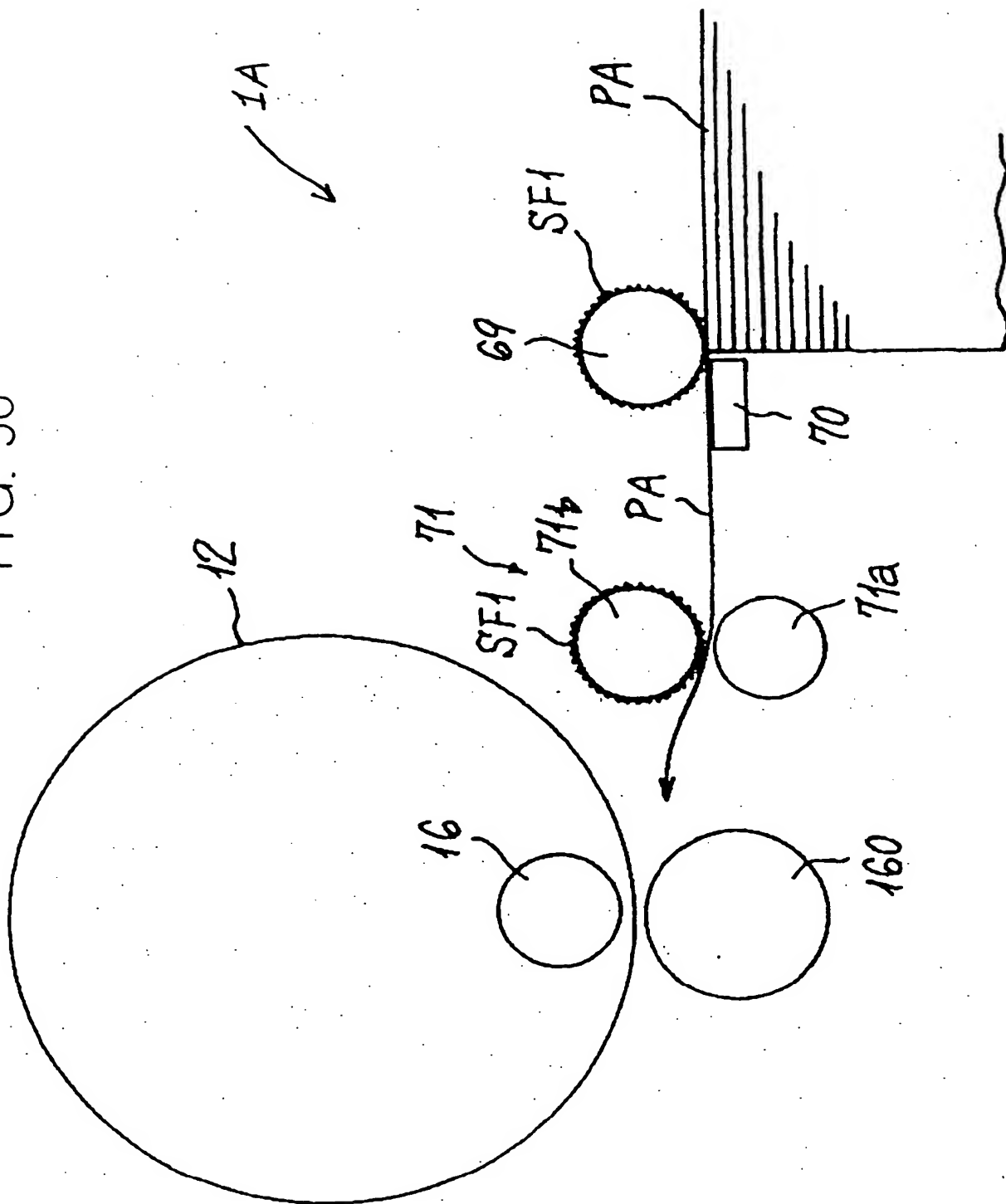


FIG. 51

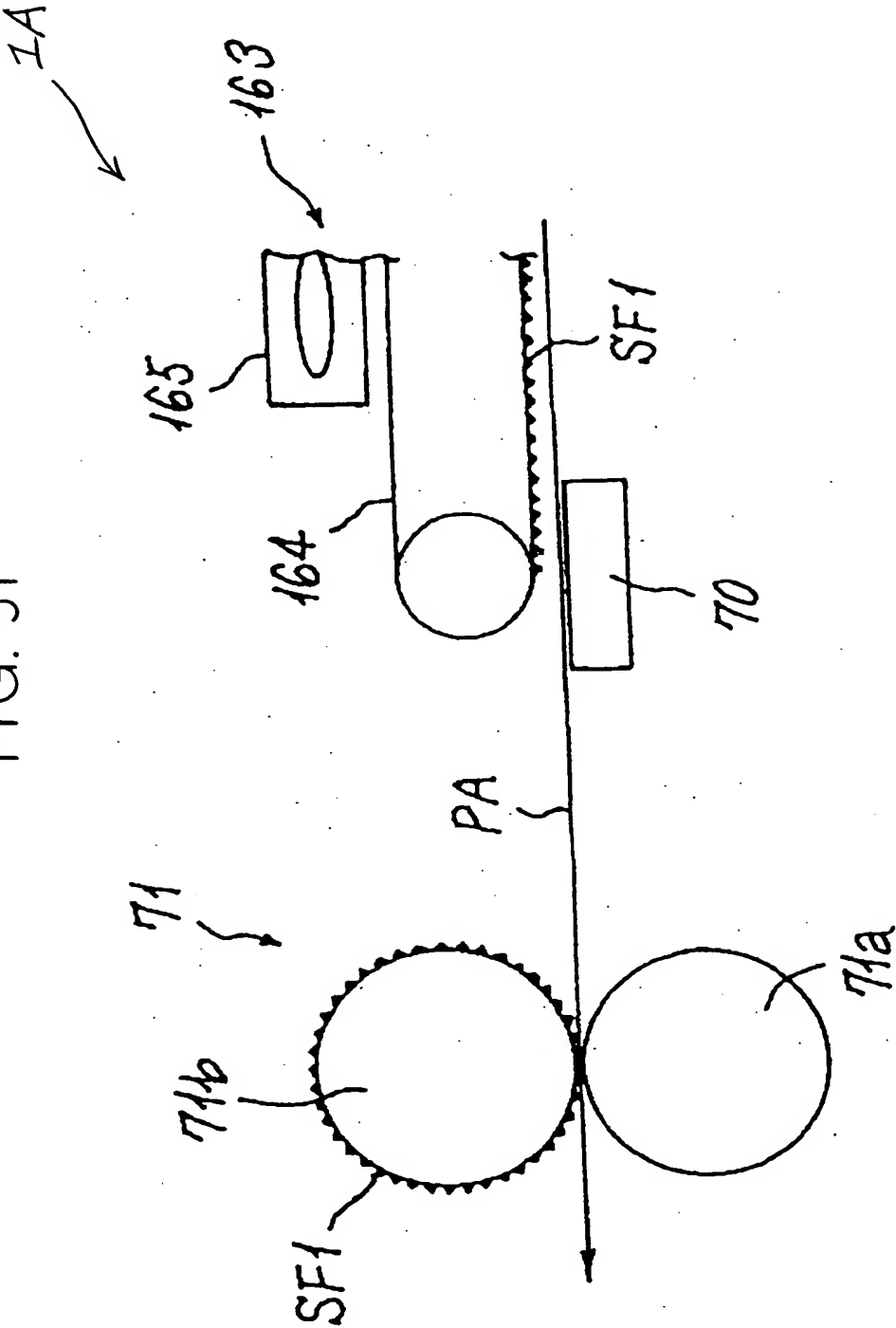


FIG. 52

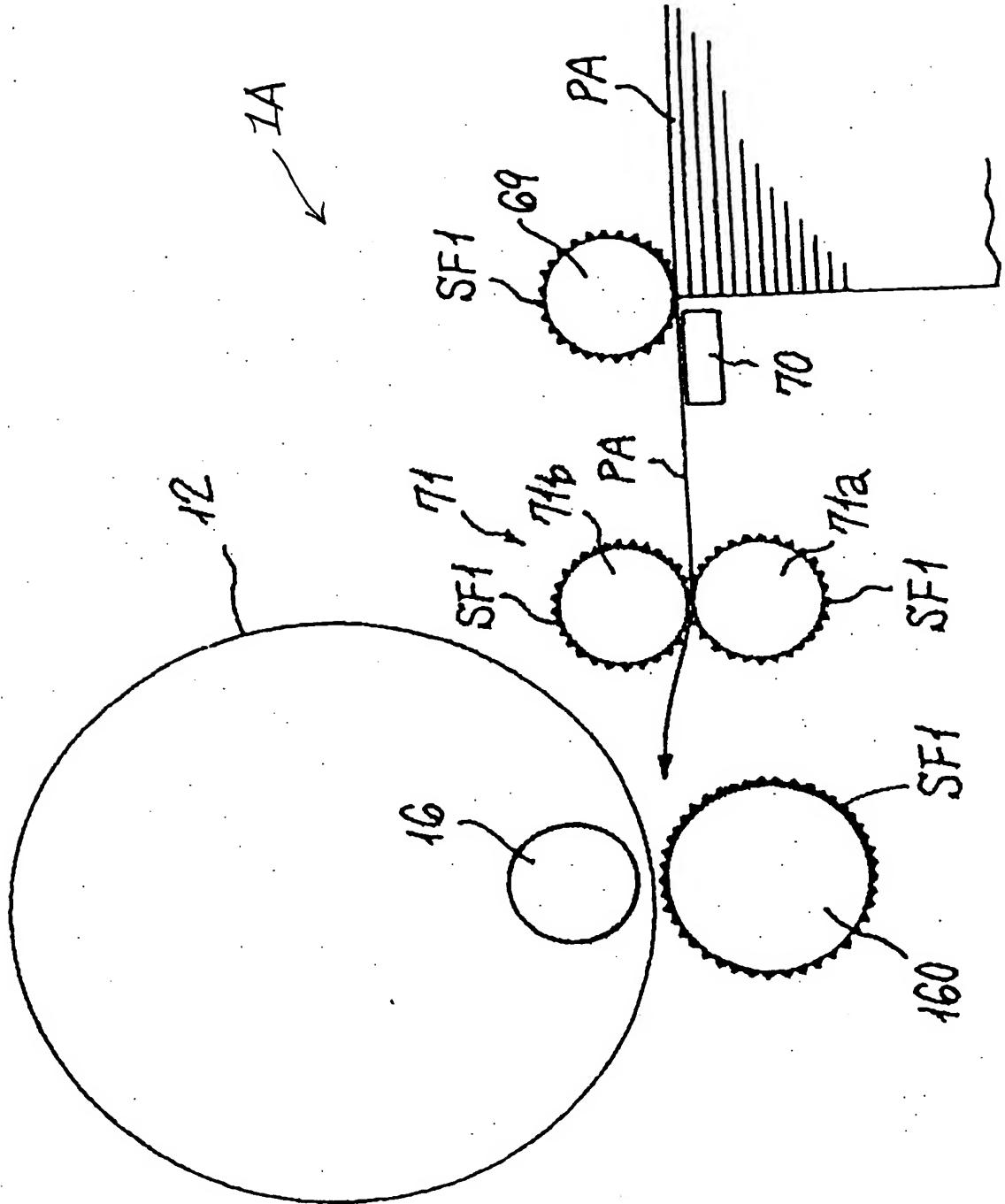


FIG. 53

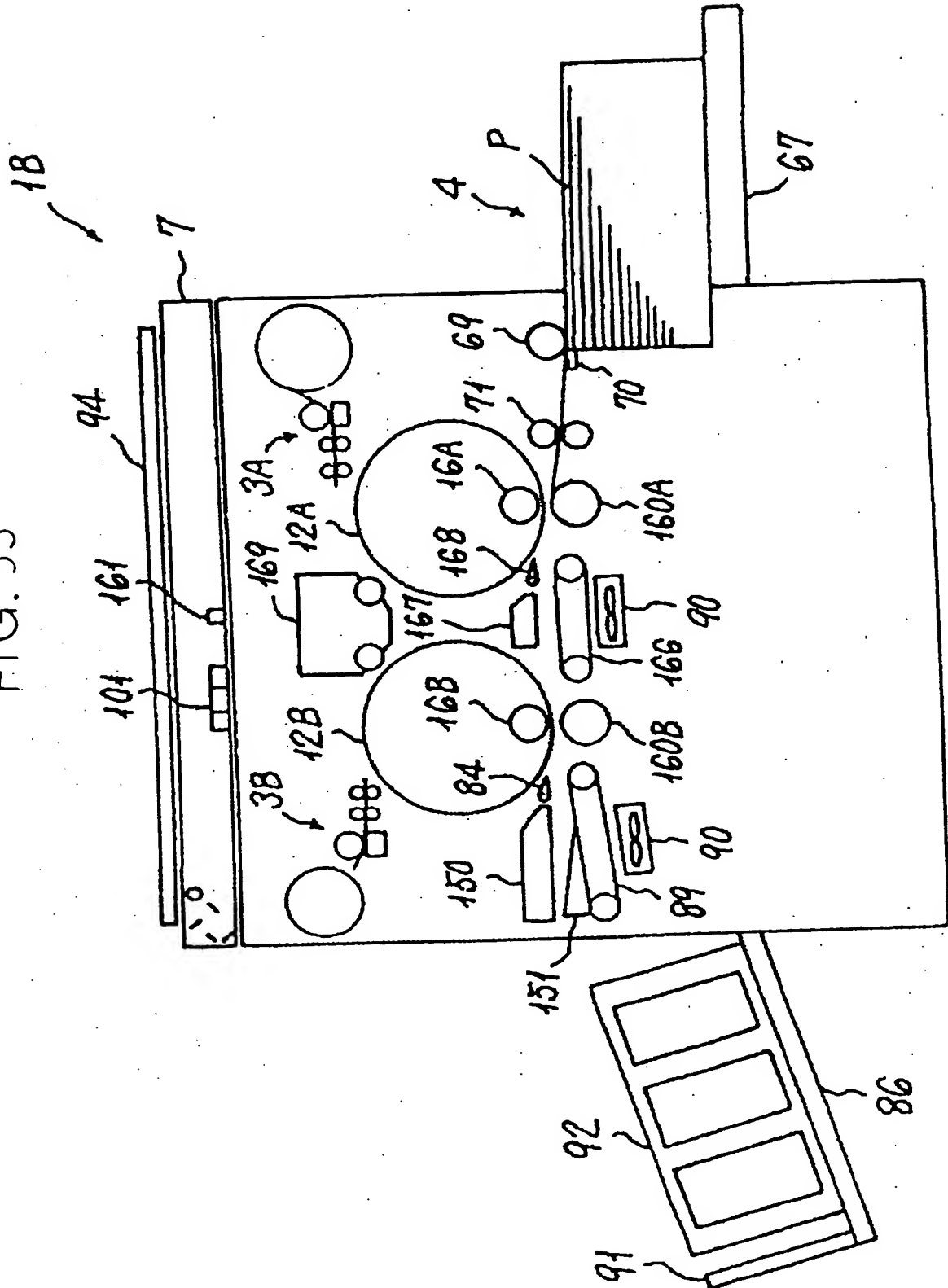


FIG. 54

